



*May • 1950*

finish



**T**HE EXPERIENCE and "Know how" gained through years of concentrated specialization in the manufacture of colors and chemicals for the ceramic industry make that subtle difference which is so evident in "Ceramic" products.

For outstanding performance depend on these "Ceramic" Colors, Chemicals and Supplies.

**COLORS:** Color Oxides; Screening Colors; Smelter Color Compounds; Printing, Graining, Stamping, Banding and Decalcomania Colors.

## CHEMICALS

Aluminum Hydrate	Cobalt Carbonate	Lithium Metasilicate	Sodium Aluminate
Ammonium Carbonate	Cobalt Compounds	Magnesium Carbonate	Sodium Antimonate
Antimony Oxide	Cobalt Oxide	Manganese Dioxide	Sodium Bichromate
Antimony, Black Needle	Cobalt Sulphate	Molybdenum	Sodium Fluoride
Arsenic Oxide, White	Copper Oxide	Compounds	Sodium Nitrite
Barium Carbonate	Cryolite	Nepheline Syenite	Sodium Silicate
Barium Chloride	Dolomite	Nickel Oxide, Gray	Sodium Silico Fluoride
Barium Molybdate	Epsom Salts	Nickel Oxide, Black	Superpax
Bentonite	Feldspar	Nickel Sulphate	Talc
Bone Ash	Flint	Opax	Tin Oxide
Borax	Fluorspar	Potassium Bichromate	Titanium Dioxide
Boric Acid	Gum Arabic	Potassium Carbonate	Urea Crystals
Cadmium Oxide	Gum Tragacanth	Potassium Nitrate	Whiting
Cadmium Sulphide	Iron Chromate	Potassium Silico Fluoride	Zinc Oxide
Calcium Carbonate	Iron Oxides	Powder Blue	Zircon, Milled
Cerium Hydrate	Lead Chromate	Pyrophyllite	Zircopax
Chromium Oxide	Red Lead	Rosin	Zirconium Silicate
Clay, Enamellers'	Litharge	Rutile, Powdered	Zirconium Oxide
	Lithium Carbonate	Soda Ash	

**SUPPLIES:** Screening Oils; Screening and Spraying Equipment; Lining Blocks, Porcelain and Silex; Porcelain Balls; Rounded Flint Grinding Cubes; French Flint Pebbles; Ball Mills, Laboratory and Production; Porcelain Jar Mills, Laboratory and Production; Paste Grinding Mills.

**CERAMIC COLOR & CHEMICAL MFG. Co.**  
NEW BRIGHTON P.A.

# THE **finish** Column **LINE**

**OBSERVATIONS**—from a traveling editor will be used for this month's editorial page—with subjects varying from steel supply to advertising.

Steel supply is again the chief topic of conversation in manufacturing plants and wherever metal products manufacturers get together. Steel is again in very short supply when compared with current demand and is a matter of grave concern to many manufacturers. Conversion steel is again a part of the production pattern.

During recent trips through Indiana and Ohio we observed more sheet steel moving by truck than at any time within recent months, and a surprising percentage of it in coils. It is definitely moving from the mills at a great rate.

This reminds us of recent newspaper reports of the Eastern railroads' moving to make major freight reductions for bulk iron and steel shipments effective May 1. This would seem to be another case of locking the barn door after the horse is stolen. From all we can learn, the only limitation to shipment of steel and many other commodities by truck lines lies in loading dock facilities at the point of shipment.

In the event that we *should* get into another shooting war it appears that the metal stamping companies do not plan to be caught napping. Through cooperation with Government agencies the metal stamping industry is preparing for quick conversion of facilities should such conversion be found necessary. And as a result of research projects many improvements and short-cuts have been found that would simplify war products manufacturing and make it less costly to the taxpayer. (See report of Pressed Metal Institute meeting — April **finish**.)

The "battle of the finishes" becomes more interesting every day as the producers of materials for the protection and beautification of home appliances and other metal products continue to improve their products through research and development. Compare, for instance, the synthetic and other organic finishes offered today with those available before the war—for color, durability, and resistance to the ordinary household hazards, and all

will agree that important advancements have been made. Now check the porcelain enamels (ceramic finishes) offered today with those in common use ten years ago, and the advancement is equally evident—harder finishes, thinner, more durable coatings, and an unbelievable reduction in the amount of material required.

All of these advancements, whether they are in the fields of organics, ceramics, plating and any kind of metal coating, are entirely to the advantage of the product manufacturer, who must offer the public greater beauty, greater durability, and a higher degree of salability at the lowest possible selling price.

It is surprising to see the number of producers of industrial materials and equipment who continue to base their sales and advertising expenditures on the current sales picture. In other words, when sales are easy they advertise heavily and encourage expense for selling—when sales are needed they cut the advertising appropriation and start putting the "eagle eye" on the salesman's expense account.

That may be one good reason why the companies who stick to their guns and do a harder job of advertising and selling when sales begin to drop off come out heads and shoulders above competition in the long pull.

We picked up this week's edition of the *Saturday Evening Post* to see a magazine of 200 pages (it has been running about 164 pages). This is a healthy indication that the manufacturers of consumer products are "putting on the pressure" to keep their manufactured products moving into the hands of consumers.

Sales training and product demonstration have been pet subjects for us in these columns. Should any manufacturer who reads this page feel that the sales training job has been done or that the average dealer is doing a completely satisfactory job of selling and demonstrating, we suggest that he turn "buyer" and check a few of his retail outlets right away. The job has only been started.

*Dana Chase*  
EDITOR AND PUBLISHER





**REJECTS**  
 Play Hob with PROFITS!  
*-but PORCELFRIT  
 cuts your rejects*

### 5 OTHER GOOD REASONS FOR USING PORCELFRIT . . .

**1. Service Engineering**—Our Service Engineers are available to make sure that PORCELFRIT works right for your product. You take no chances.

**2. Improved Smelting**—Ing-Rich uses unquestionably the world's finest smelting method, the result of exhaustive research and experiment.

**3. Laboratory Control**—Our ceramic engineers maintain constant contact with the production staff to make sure of highest quality.

**4. Plant Testing**—Right in our own job enameling plant, under conditions of actual use, we use PORCELFRIT. When you get it, it's right.

**5. Experience**—Since 1901 Ing-Rich has pioneered in porcelain enameling. We have learned a lot in that time—and our customers profit by it.

INGRAM-RICHARDSON MFG. CO. OF INDIANA, INC.

OFFICES, LABORATORY AND PLANT  
 FRANKFORT, INDIANA

There's nothing so disheartening . . . and very few setbacks so costly . . . as to have the rejects pile up on you.

If you're having such difficulty . . . and if the kind of frit you're using has anything to do with it . . . then Ing-Rich can be of service to you. We don't claim that PORCELFRIT will *eliminate* rejects, but we're darned sure it will bring them down to an irreducible minimum.

That's not cockiness, but it *is* confidence. There are three reasons for our assurance. First, PORCELFRIT is continuously and thoroughly tested in our laboratory. Second, it is used right in our own job enameling department under the same conditions that apply in your plant. Third, without obligation to you, we send a qualified service engineer to make *sure* that PORCELFRIT works for you. That's the kind of follow-through that helps your product to *stay* sold.

Give PORCELFRIT a trial—and watch your rejects slump!





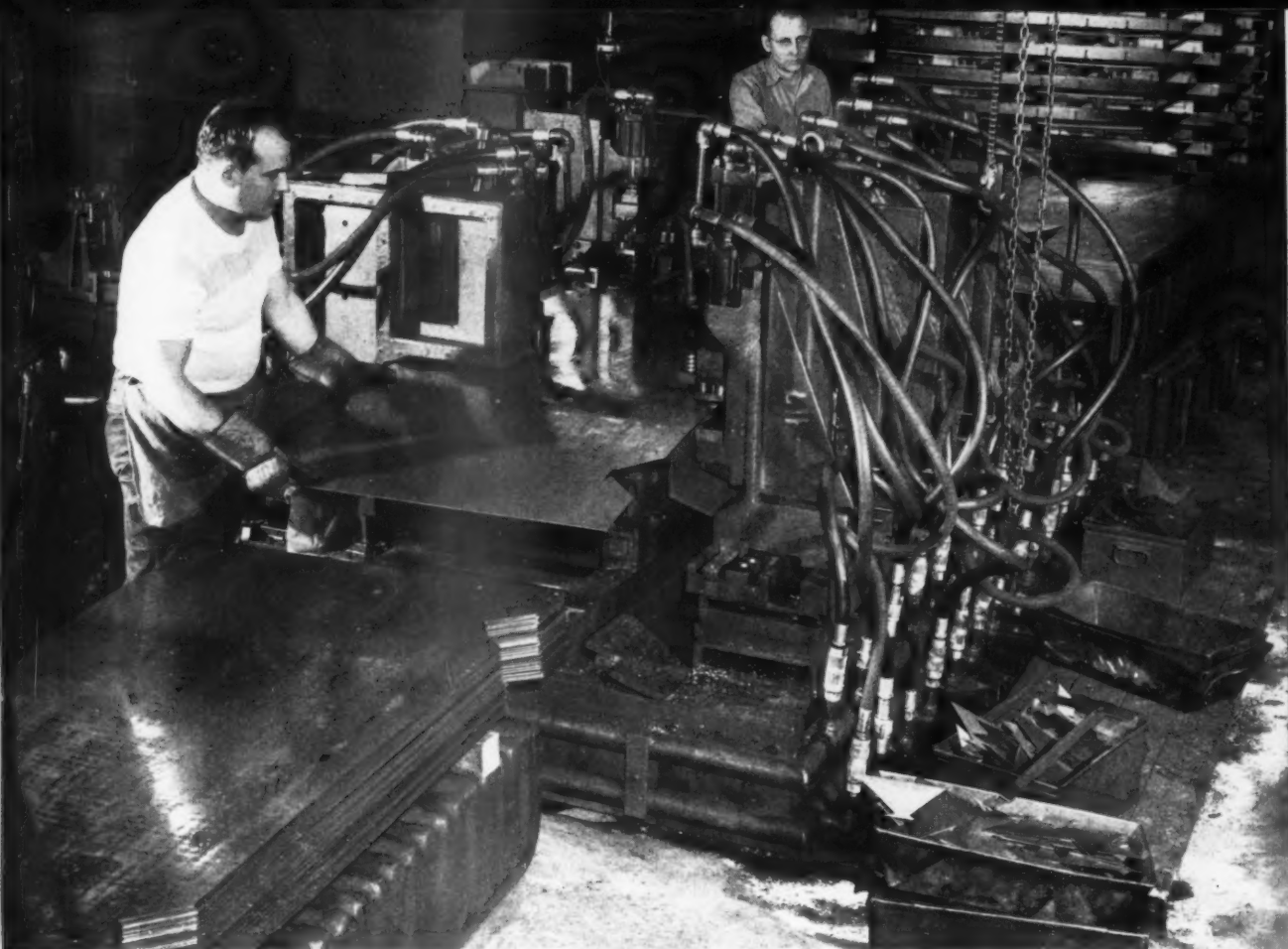


Photo 1 — Hydraulic piercing machine used for notching and piercing operations.

## An efficient production line for ice cream cabinets

a photo story of fabricating, welding, finishing, assembly and handling operations

by *Dr. William Mikulas* • ASSISTANT CHIEF ENGINEER, KELVINATOR DIVISION,  
NASH-KELVINATOR CORPORATION, DETROIT, MICHIGAN

For the ice cream cabinet today not only serves as a storage cabinet, but equipped with lighted merchandising boards and located in a prominent location in the store it also does a selling job for the merchant—the kind of selling job that has helped boost the ice cream industry up over the three-quarter billion mark in annual dollar volume, with a yearly consumption figure of more than 600,000,000 gallons.

Nash-Kelvinator Corporation produces ice cream cabinets in its Kelvinator Division plant in Detroit,

Michigan. Fabrication on the Detroit production lines has been planned so that all important qualities that an ice cream cabinet must have are “built in” right on the line.

### Fabricating the shell

Manufacturing begins with the basic raw material—a flat rectangular sheet of 19 gauge steel, which is to serve as the cabinet exterior, or “shell”. The shell varies in size with the sizes of the ice cream cabinets, which in the Kelvinator line run from single-row two-hole up to

*Exclusive  
feature*  
**finish**

To meet the everyday demands of store traffic, the modern ice cream cabinet must have built into it much more than the ability to keep ice cream at the proper cold temperature.

It must be well insulated and sealed for economical trouble-free operation, must be sturdy to withstand the shocks of heavy daily use, and must be cleanly designed, smoothly fabricated and attractively finished.



Photo 2 — Tangent-bender forms cabinet shell into shape. This shell is formed one-half of exterior of 4-hole double-row cabinet.



double-row twelve-hole models.

First operation is to cut the steel to size, and feed it through a hydraulic piercing machine, which cuts notches at points where bends are to be made, and pierces screw and bolt holes (Photo 1). From the hydro-pierce operation, the cabinet shells go to a punch press, where a sharp  $15/16$ " flange is made at 90 degrees, running the entire length of one long side. On the opposite side for the entire length a flange  $2\ 1/32$ " wide is formed with a  $1\ 1/2$ " radius, and from this there is formed another flange  $5/8$ " wide at a 90 degree angle. Next, on certain smaller models, tubular condensing coils are attached to the inside of the shell.

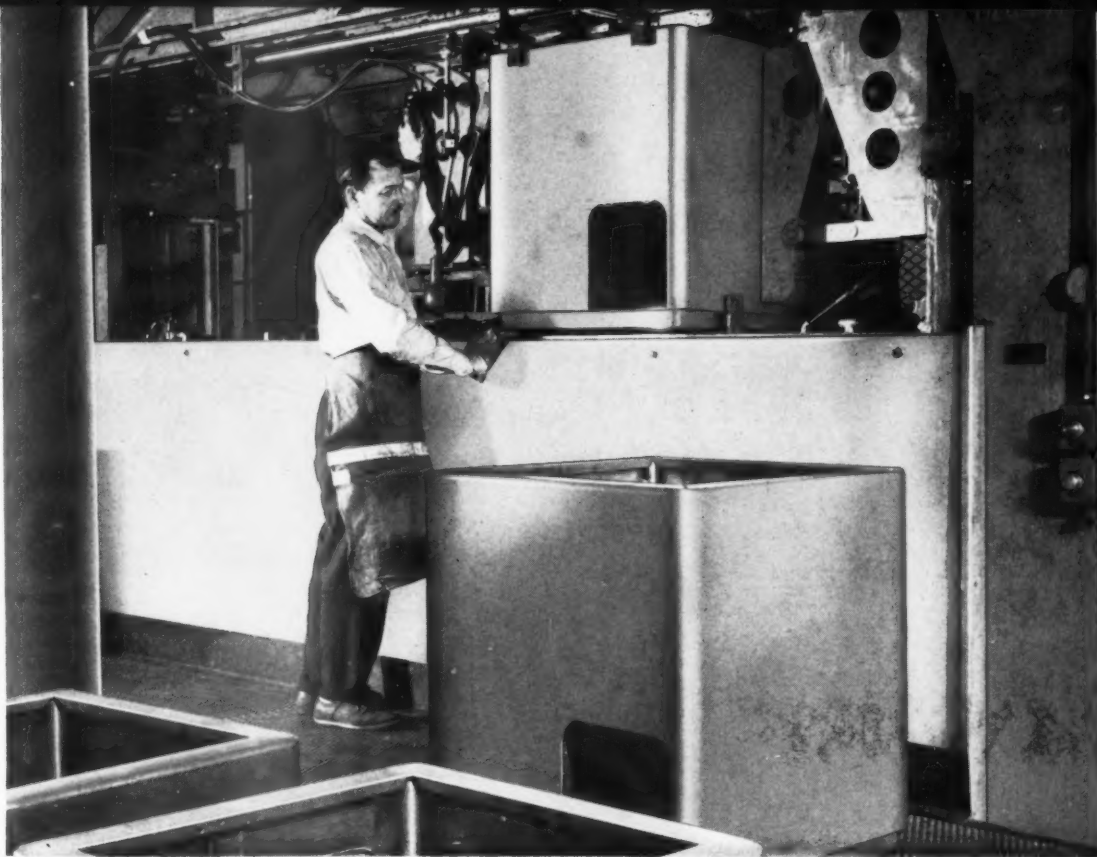
#### Use of tangent-bender prevents wrinkling

The shell then proceeds to a tangent-bender (Photo 2), where it is inserted into the lower die on the machine, and is confined on the outside

Photo 3 — Reinforcements are spot welded in corners of 4-hole double-row cabinet.

MAY • 1950 finish

Photo 4—This multiple point automatic welding machine simultaneously welds beams joining two halves of four-hole double-row cabinet shell.



of the flanges at the bending points. The upper die then comes in contact with the part and clamps it at the bending points, while at the same time it expands hydraulically against the inside of the flanges, confining them under tension so that when the corners are formed, there will be no wrinkling of metal. The two ends of the lower die "wipe" up around the upper die, making two bends in unison. The part is now a "U" shape, correctly proportioned to form one-half the finished cabinet shell.

Use of the tangent-bender in this operation makes it possible to form the bends in the shell after it has been flanged without wrinkling the metal around the bends, and producing perfect ball corners and a properly squared "U". In making bends of this type before the tangent-bender method, it was necessary to cut notches at the bending points. After bending, it was necessary to braze in these notches and work the

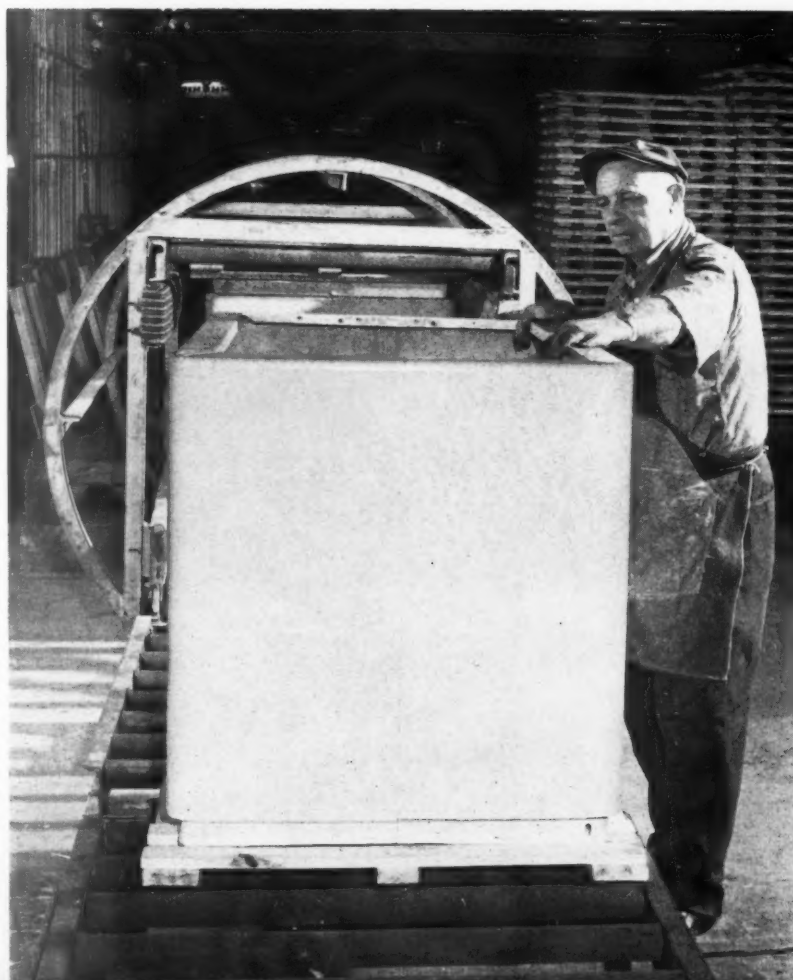


Photo 5—Cabinet shells are turned right-side up in this rotating fixture after addition of crate bottom.



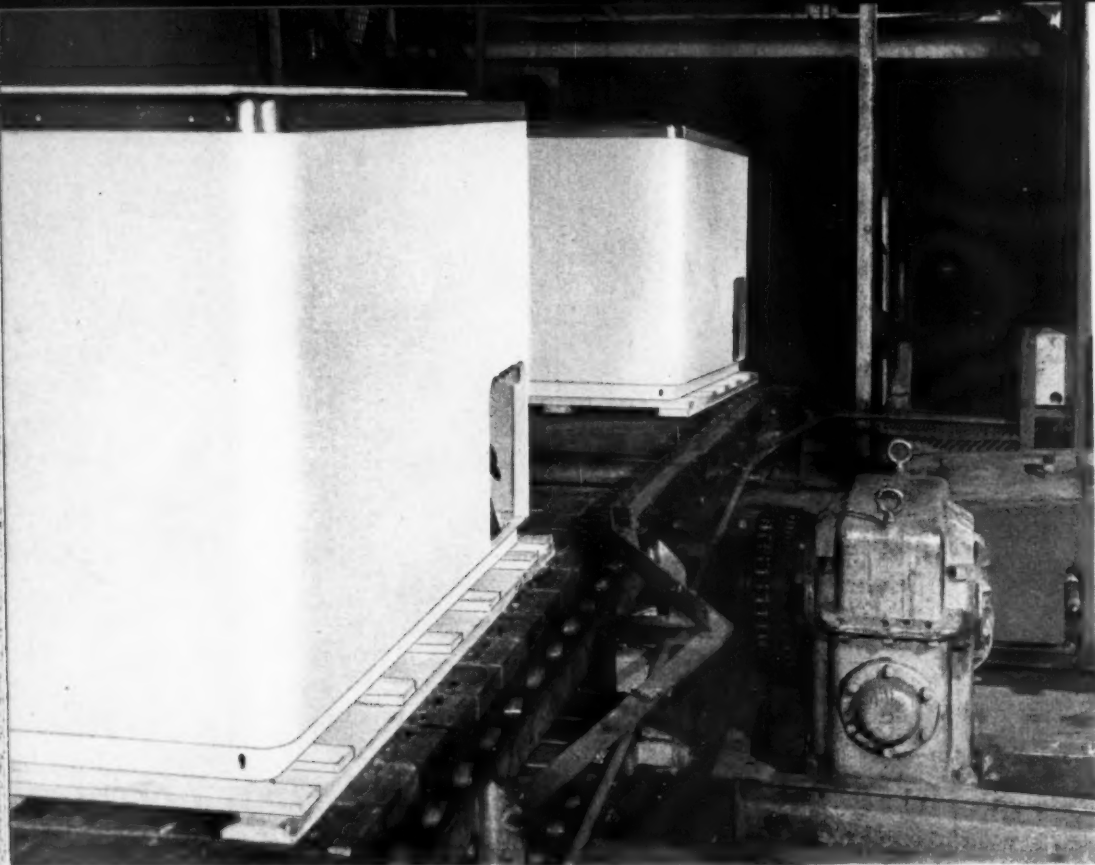


Photo 6 — Eight-hole double-row cabinets, ready for operation, move down incline to crating department.

metal by hand down to a smoothly finished surface.

The old method involved more operations, more labor, higher cost, and less satisfactory results.

#### **Automatic welding effectively used**

From the tangent-bender, the half-shell proceeds through a series of

operations in which the opening for the refrigerating unit compartment is cut out and flanged. Reinforcements are added to the corners, and spot-welded (Photo 3), in a fixture which squares up the whole assembly.

Subsequent processing includes inserting part of the tank bottom and the rail on which the cabinet is to

rest, assembling the two halves of the shell and tack-welding to hold them in place until they can be completely welded. Next the seams where the two halves meet are securely welded simultaneously in a multiple-point automatic welding machine (Photo 4).

#### **Infra-red used for organic finishing**

After metal finishing, the assembly is prepared for painting. The cabinet proceeds through a spray-bonderizing system in which it is cleaned with an alkali solution, water-rinsed, treated with a non-metallic crystalline coating to provide a firm anchor for the enamel and retard rust and corrosion, water-rinsed again and finally sprayed with a mild chromic acid rinse.

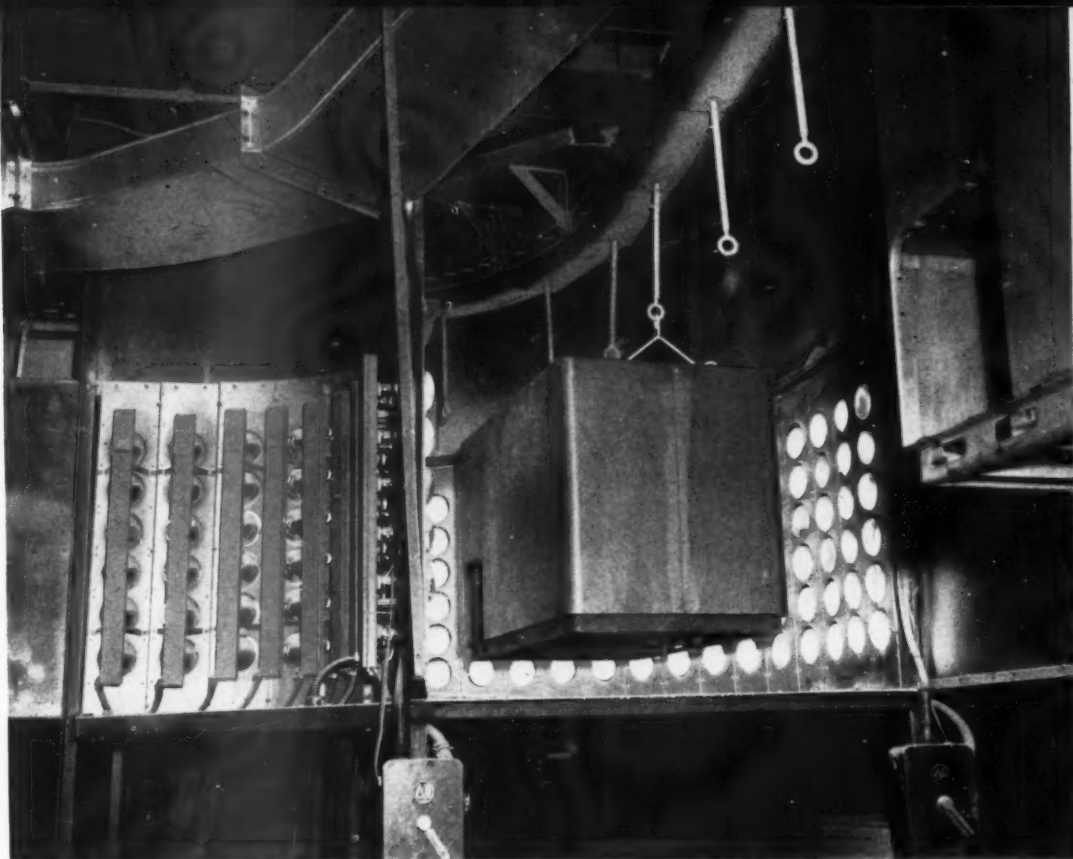
Next step is a trip through a tunnel of infra-red lights which pre-heat the cabinets to uniform temperature (Photo 8). White enamel, also pre-heated, is sprayed on and the finish baked for an equivalent of 30 minutes at 300° F. After drying, the cabinet



Photo 7 — Cabinet liner is inserted in an eight-hole double-row shell.



Photo 8 — Six-hole double-row cabinet enters tunnel of infra-red lights for preheating prior to finish application.



shells are inverted, crate bottoms are bolted on, and the entire assembly is righted in a special rotating "turn-over" fixture (Photo 5). The shells are moved out onto a roller-conveyor for further processing.

All corners and seams are sealed on the inside with an asphalt-base material against air and moisture leaks. Glass wool insulation is installed in packs precut to the proper size, and covered with water-resistant protective paper. Cabinet liners, fabricated elsewhere in the plant and braced at the top with wood frames, meet the final assembly line at this point, and are inserted in the insulated shell (Photo 7).

#### Tested with electronic "sniffer"

As the line moves on, stainless steel caps are fitted over the top of the cabinet. Next, refrigerating units are installed in the open machine compartment at the base of one end of the cabinet (Photo 9).

Lines from the refrigerating unit are connected with refrigerant tubing running inside the cabinet, and the system is charged with refrigerant and tested for leaks. The testing apparatus is a new electronic "sniffer" which is sensitive enough to detect leaks so minute that they would not impair the cabinet's efficiency in 20

years of operation. Any defects are checked and remedied, and the finished ice cream cabinets are moved by conveyors down an incline from the second floor to the first floor crating department (Photo 6).

The final step is addition of new polystyrene lids, cleaning and wiping and crating for shipment.

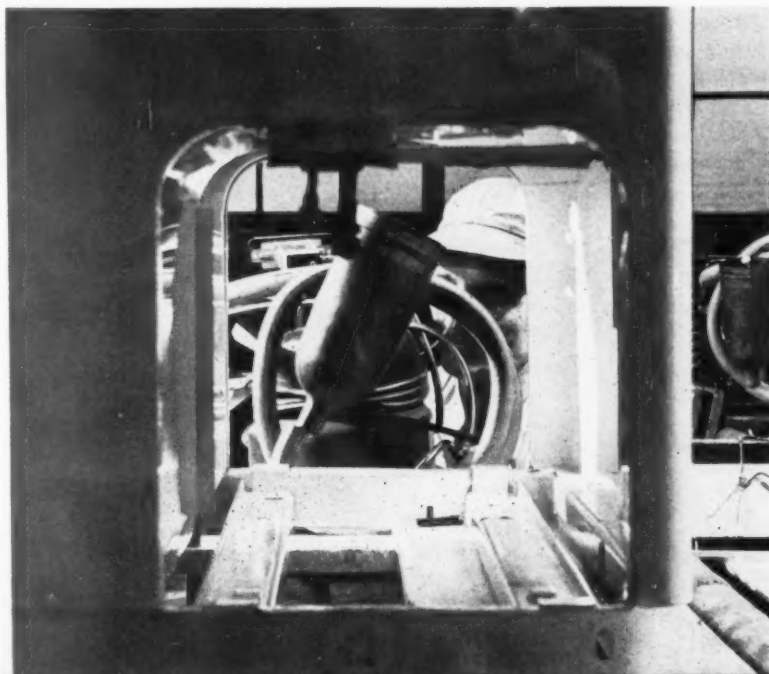


Photo 9 — Refrigerating unit being installed in compartment of cabinet.

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# What is your burning tool problem...

**SPALLING?** **SHORT LIFE?**  
**MAINTENANCE?**  
**CORROSION?**  
**EXCESS WEIGHT?**

Many of your most troublesome burning tool problems can be solved by using Inconel® and good fixture design.

Inconel, an alloy of 77% nickel and 15% chromium, makes burning tools that last for thousands of hours at enameling furnace temperatures. Inconel is extremely resistant to destructive high temperature corrosion. At high temperatures, it develops a tightly-adhering oxide film which prevents scaling.

In addition to excellent thermal durability, Inconel possesses high hot strength. The same load can be carried on lighter-weight fixtures, with correspondingly lower fuel costs. The lighter weight and more compact Inconel fixtures permit increased furnace loads.

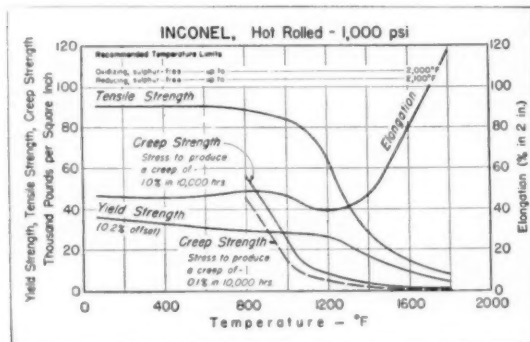
Inconel can be readily fabricated without special tools... can be welded to form strong, corrosion- and heat-resisting joints.

To simplify your design problems, Inconel is quickly available from warehouse stocks in all standard mill forms... tees, angles, flats, sheet, rod, tubing, strip, wire, and fastenings.

There are specializing Inco Nickel Alloy fabricators near you who will be glad to quote on your designs. Or you may find what you need in eco-

nomical stock fixtures to fit standard furnaces.

Write for your copy of "Keep Operating Costs Down When Temperatures Go Up"—contains engineering information, fabricating hints, sources of supply.



*Ask for it!*



THE INTERNATIONAL NICKEL COMPANY, INC.  
67 Wall Street, New York 5, N. Y.

## INCONEL...for long life at high temperatures

# Avoiding enamel difficulties through proper furnace operation

by *M. Boysin* • FERRO ENAMEL CORPORATION, CLEVELAND, OHIO

## Part I

**A**VOIDING enamel difficulties through proper operation of furnaces is accomplished by recognizing and adhering to certain proven specifications regarding atmospheric, combustion and temperature conditions. If enamel in the bisque state is processed through a plant, and conveyed many feet before it enters the furnace, harmful gases may contaminate the enamel thus causing rejects.

The reason for this is that the chemical and physical conditions of that plant have not been set up to definite specifications. By that I mean there are certain gases in the plant air and in the combustion chambers of the furnace and driers which can cause trouble in finished porcelain enamel ware.

About 21 years ago, McIntyre, Irwin, and several others in the field started investigating, first in a laboratory way and then on a commercial scale, to find out what caused defects like blistering, copperheading, and scumming. It was well known and publicized shortly after their investigation that blisters resulted if a piece of porcelain enamel ware was fired in a furnace atmosphere containing steam. In other words, water vapor was detrimental. It was also discovered that certain concentrations of acid gases were harmful.

### Specifications for water vapor and acid gases

At this time we can submit a definite set of specifications on water vapor and acid gases. If the acid gases are broken down to their component parts, such gases as sulphur trioxide, fluorine, and chlorine can be specified.

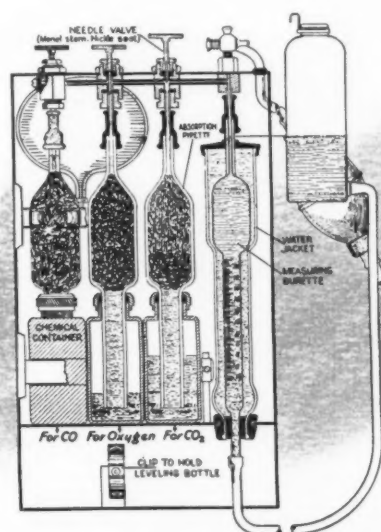
Let's review what can be expected from excess concentrations of these gases in the way of defects, no matter how well the process has been controlled to this point.

The presence of 1% maximum water vapor in the firing atmosphere of a furnace is considered good, 2% commercial or fair, but 3% water vapor can result in blistering as well as orange peel. During the wet weather in the summer and fall, enameling problems seem to increase as far as rejects are concerned. This is because the humidity in the air is high for that period. The moisture in the furnace atmosphere rises in the same proportion and firing is accomplished in a zone which contains a high concentration of water vapor.

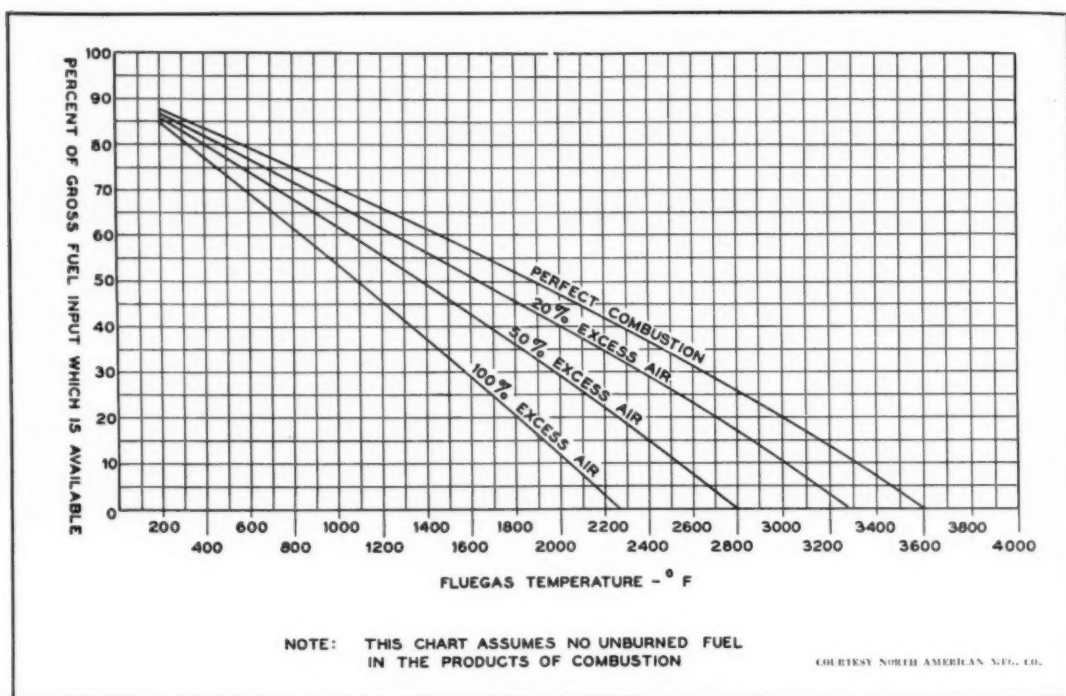
Practically all gaseous fuels contain from a grain of sulphur to 8 or 10 grains per 100 cubic feet. This

may seem minor, but when you burn 10,000 cubic feet an hour in a continuous furnace or a series of furnaces and driers, substantial amounts of sulphur dioxide are liberated. The sulphur dioxide will be oxidized to trioxide, and, being an acid gas, will immediately react with the alkali in bisque coating and produce scumming to a marked degree. It takes only three parts per million of sulphur trioxide to produce scumming on zircon enamels.

Most enamels contain fluorine. Enamel exposed to silicon tetrafluoride will result in scumming, and that is what has happened in many improperly vented electric furnaces. The electric furnace operators conserve heat, bottle harmful gases, and the fluorine concentration is built up from 10 to 20 parts per million, resulting in scumming. Therefore, venting the



Cross section, front view of an Orsat apparatus of type which will indicate percentage of carbon dioxide, oxygen and carbon monoxide.



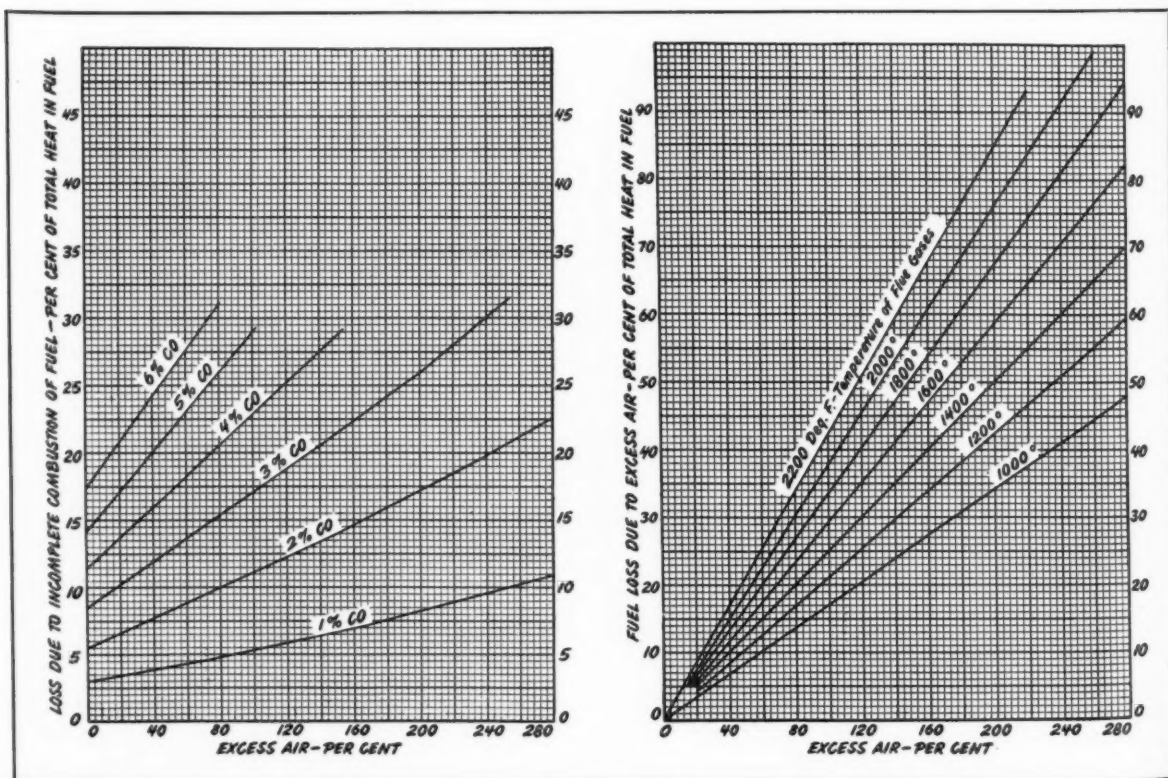
Approximate available heat from combustion of coal, gas or oil from flue gas temperature.

electric furnace will eliminate much of these acid gases liberated during the firing cycle.

Installing a degreaser in an enamel-

ing plant can raise another problem. Degreasers use chlorinated hydrocarbons, the vapors of which, when heated to a temperature of 1500° F.

in a porcelain enamel furnace, convert these chlorinated hydrocarbons to hydrochloric acid, which in turn will attack steel and may cause blister-



Fuel loss due to incomplete combustion of fuel oil.

Fuel loss due to combustion of fuel oil with excess air.



ing and copperheading of finished ware. It will take only a tenth of a part per million of chlorine to do such damage.

In studying a problem of this type, we checked the furnace atmosphere and found a high concentration of acid gases but could not detect their origin. They could not come from the fuel because the muffle was tight, and the water vapor was not high enough in proportion. On investigation, we found a degreaser was located about 50 feet from that furnace. It was emitting a small amount of chlorinated hydrocarbons which eventually found their way into the furnace atmosphere, causing rejects amounting to 50%.

#### Specifications based on long term data

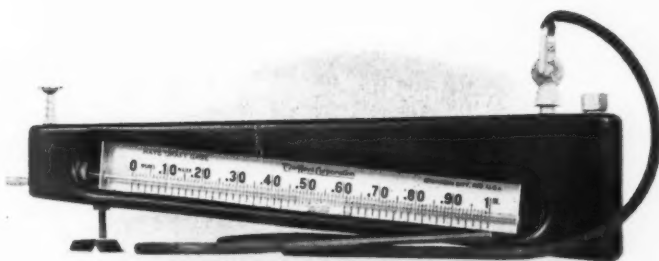
In the study, after initial work was done, we ran hundreds of analyses on all types of enameling furnace atmosphere. This data was collected over a period of about 15 years. During the first 5 or 6 years we averaged water vapor and acid gas results. The acid gases include sulphur, chlorine, carbon and fluorine compounds which were calculated to CO<sub>2</sub>. Averages obtained gave a working basis for good, fair, and poor firing zone atmospheres.

Over this period of time, 1% was considered a desirable percentage of water vapor to hold. A tenth of a per cent acid gases is considered excellent, and some furnaces are in this category. In an industrial atmosphere two-tenths of a per cent acid gases can be present. There should not be any more acid gases in a furnace atmosphere than are present in normal industrial atmospheres.

A normal commercial furnace, representing about 85% of all furnaces tested, contains one-half per cent acid gases in the firing zone. Three per cent is high in water vapor; 1½% is extremely high in acid gases. If enamel ware is fired in this atmosphere considerable trouble may be expected.

After many years we averaged analyses covering water vapor and acid gases on every type of furnace atmosphere and established specifications for good, fair, and poor op-

finish MAY • 1950



An inclined draft gauge.



Diaphragm type draft gauge.

erating conditions. These are as follows:

Standards	H <sub>2</sub> O	CO <sub>2</sub>
Good max.	1.00	0.10
Fair max.	2.00	0.50
Poor max.	3.00	1.50

These specifications were verified by scores of additional analyses, there-

Obtain a measured amount of gas by means of a flow meter and absorb in a chemical contained in a special type of absorption bottle. Take 5, 10, or possibly 30 cubic feet of gas, depending upon what is to be determined, and by analyzing the contents of these bottles arrive at exactly what percentage of constituents are present in the furnace atmosphere. By proper methods of calculation, these constituents can be expressed in percentage or parts per million.

There are several chemical methods for obtaining these results. One is the gravimetric method in which we absorb and weigh the contaminating gas. For example, water vapor is actually weighed. Other gases that are present in small amounts are determined by colorimetric methods. In other words, the gas we are looking for reacts with another chemical to give a definite color which is proportional to the amount of constituent present.

Another is called the turbidimetric method, in which a precipitate or cloudy effect is produced. The cloudiness is proportional to the amount of contaminating gases. For example, chlorine is determined by this method.

to Page 78 →

#### Editor's Note:

All illustrations for Mr. Bozsin's article appear through courtesy of The Enamelist, The Enamelist Publishing Company, 4150 East 56th Street, Cleveland 5, Ohio.

Detailed instructions covering chemical and physical determinations for porcelain enameling plants may be obtained by writing to The Enamelist on your company letterhead.

Part II of this article, to appear in June finish, covers such subjects as proper combustion, pyrometry, determination of temperature gradients, burner requirements, importance of proper tooling, and specifications for "fire box" temperatures.

fore standards have been set up for practical purposes.

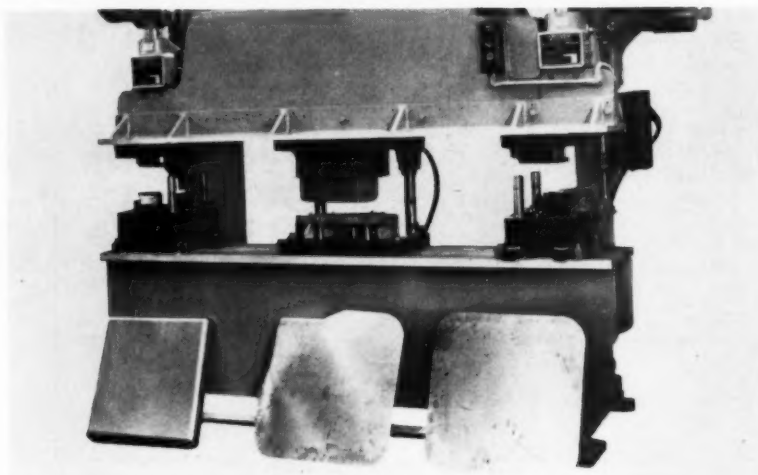
#### Method for analysis

One standard method for the analysis of atmospheric contaminants is as follows:



## SUGGESTION BOX

### Ball corners formed in standard press brakes



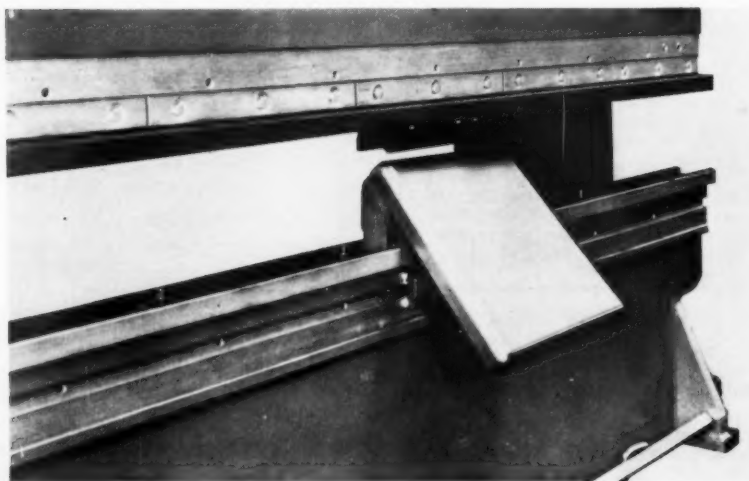
*Standard press brake equipped with dies for performing the first three operations on ball corners. The first die on the right trims two ball corners on a square sheared brake in four strokes. The center die draws the corner in four strokes, and the die on the left cam trims surplus material from the corners.*

**I**N a recently developed tool-up it is now possible to form ball corners in standard press brakes at a saving of 30 to 50 cents per panel over conventional methods. Additional benefits claimed for this method are improved product appearance,

minimum spoilage, elimination of corner welding and finishing, and substantially reduced handling.

With the suggested method, operations start with a square sheared blank. The first operation is to trim developed corners (4 strokes); the

*Standard press brake equipped with a restrike die for forming side flanges in the ball corners tool-up. This die consists of a set of master ends which can be expanded any desired distance by placing filler blocks between the ends.*



second operation is to draw the corners (4 strokes); the third operation is to cam trim after the draw (4 strokes). These first three operations are performed in a single press brake equipped with three sets of dies.

The fourth operation, restriking the side flanges, also requiring four strokes, is performed in a second brake equipped with a sectional restrike die. This consists of a pair of master ends and filler blocks to permit restriking any length within the capacity of the brake.

Thus, a ball corner panel is completed in only two handlings without special machinery. The tool-up is said to be easily and economically adaptable to a wide variety of sizes, although the original investment required is considerably less than for conventional special equipment.

*Source for further information on this advantageous tool-up development may be obtained without obligation by writing finish.*

### PENNSALT CENTENNIAL REPORT SHOWS RECORD SALES

Pennsylvania Salt Manufacturing Company, celebrating its centennial this year, has announced in its annual report that sales for 1949 totaled 33,173,199, the highest in the company's history and 742,489 higher than in 1948.

Consolidated net profits for the year ended December 31, 1949, were 22,686,760, also the greatest in any year of the firm's existence. This profit was 402,527 better than in 1948 and was 961,233 higher than the company's average profit for the previous 10 years, the report showed.

"Two main factors contributed to these increased profits," said George B. Beitzel, president, in the report. "One was the increase in sales. The other was the reduction of manufacturing costs realized from our post-war expansion and improvement program."

The Diversey Corporation is moving its general offices and laboratories to 1820 West Roscoe Street, Chicago.

# Filtering practice for plating solutions

some notes on the filtration of various plating solutions  
with reference to methods and types of baths

by *K. L. Carr* • INDUSTRIAL DIVISION, SPARKLER MANUFACTURING CO., MUNDELEIN, ILL.

THE clarification filtration of plating solutions has been for some years a well established practice. In spite of precleaning, degreasing, and many other means of providing a clean surface to the plating bath, foreign materials are bound to creep in. In addition, in some cases there are products of electroplating, partly from impurity in the plating materials and partly from the natural elec-

trolytic position of metals, that must be removed.

## Continuous filtration

Filtration as it is usually practiced can be carried out in either one of two ways or with a combination of them. The first, and perhaps the commonest application of plating solution filtration, is known as continuous filtration, where the plating

solution is pumped out of the plating tank through a precoated filter and back into the plating tank. It is frequently found advantageous to pump out of one end of the tank and enter the filtered liquid in a jetting stream on the bottom of the other end of the tank so as to provide a sweeping action, which gradually will move the sedimentary material toward and into the filter inlet. →

Photo shows a plating filter installation in the plant of one of the large automotive manufacturers.



This type of filtration usually takes place in a precoated filter. But there is a further variation of this, which is frequently used today, whereby the filter is slurry fed by means of a proportioning pump which adds a measured amount of filter aid, carbon, or both, to the filter inlet, so as to provide a constantly rising, constantly porous filter cake. In this way the cycle of the filter is determined by the cake space within the filter and the percentage of solids being added with the liquid flow.

#### The batch method

The second main division of filtering plating solution is the batch method, where, as a rule, the liquid is pumped out of the plating tank into a storage tank. There it is mixed with a predetermined percentage of filter aid which is agitated in, and the entire batch is filtered back into the plating tank which has in the meantime been thoroughly cleaned out. Quite frequently, adjustments in concentration and pH are made in this outside mixing tank before the solution is run back into the plating tank.

Plating solutions frequently pick up organic material which may be left from mill cutting oil or grease, even though the material has been cleaned or degreased. These organic materials cause faulty plating and should be constantly removed from a plating bath, if in any quantity at all. Fortunately, these will cling to or adsorb on activated carbon, and as a usual thing this is their means of removal, that is by precoating the filter with activated carbon and passing the plating solution containing the organic impurity through it. The carbon will continue to pick up the organics to the limit of its adsorptive capacity at which time the filter must be changed and re-precoated. More often, however, the difficulty lies in occasional precipitates which have a tendency to lie on the work and underlie the plating, causing a fog or defect therein.

#### Two principal classifications of plating baths

There are two main classifications of plating baths, namely, acid baths

and alkaline or cyanide baths. In the case of most acid baths such as bright nickel, acid copper, acid zinc, etc., diatomaceous silica is about as good a filter aid as can be obtained commercially, and the usual holding media could normally run the gamut from paper through cotton cloths, woolen cloths, glass fiber cloth, resin fiber cloth and even woven wire cloth of various metals and alloys. There are, however, one or two choices that have seemed advisable in this category. In the case of acid bright nickel, as exemplified by many plating solution suppliers, normally best results are obtained where metal is employed by the use of pure nickel. On the other hand, in the case of an acid copper bath, type 316 stainless steel is ordinarily found to give better results. This is due, no doubt in part, to electrolysis. Many manufacturers have found it advisable to go to the use of rubber lined equipment with hard rubber or composition accessories, so that as much metal as possible can be isolated from the bath.

In cases of alkaline or cyanide plating baths, there is quite a marked variation in some respects, for here it is usual to use all iron equipment, exposing the metals to the bath. In no cases that we know is it permissible to use bronze, although rubber lined tanks can be employed. Hard rubber or composition filter plates, however, are not recommended. It is possible and sometimes feasible to use cellulosic holding media such as cotton or paper, although most of the others, with the exception of wool or glass, can be used. It frequently becomes advisable to depart from the use of silica filter aid in favor of organic ones such as cellulosic floc, as many of the silicates react readily with stronger alkalis to become silicates, while there is no action in the presence of cellulose. We are advised, however, that in some cyanide baths an asbestos mixture is recommended and works very well. Since the composition of the mixture is rather closely guarded, we will not attempt to discuss the why and wherefore of this apparent discrepancy. It is good practice to try to stick close

to fundamental chemicals and accessories. Along this line, it has been found advisable to supplant silicious filter aid with organic ones of cellulose nature in the case of plating baths containing hydrofluoric acid because of the highly soluble nature of silica in this acid.

#### Filtration of acid chrome baths

In connection with the filtration of acid chrome baths, conflicting experiences have been encountered. Acid chrome can be filtered very readily in low carbon steel equipment through a holding media of resin fiber cloth and utilizing silicious filter aid with very good results. One of the outstanding difficulties in the filtration of acid chrome baths is the vigorous action of the liquid on pump packing and for this reason it may seem advisable to use a submerged pump which does not require much in the way of packing and where lead bearings can be employed. On the other hand, we have been advised by reputable platers that with the exception of the necessity for removing gloves, monkey wrenches, and stray lengths of pipe from the baths, there should never be any reason for filtering chromic acid bath if the current density is kept up at the proper level. This art being slightly foreign to the art of filtration itself, we are in no position to refute or agree with this statement.

Fundamentally, in the practice of continuous filtration, the filter is normally precoated by means of running a slurry of the desired filter aid and water through and through the filter until the effluent is clear. Normal practice with a colored solution would dictate that the plating solution be cut into the pump suction with the pump still running, and the filter effluent discarded until the color changes, at which time, of course, it is cut back into the plating tank. On the other hand, it may seem advisable to precoat at one location and move the filter to another location for filtration. In this case, it is well to choose your filter so that your established precoat will remain in place with no disturbance until the flow is again started.



# Edison Electric Institute

## holds annual sales conference

**C**ITING evidence that electric utility "sales opportunities are greater," with "unsold markets still growing in size," Harry Restofski, chairman, EEI Commercial Division General Committee, opened the general session of the Edison Electric Institute's 16th annual sales conference, held at the Edgewater Beach Hotel, Chicago, April 3-7. He stated that there is a definite trend toward more aggressive selling among utility companies, with a return to full or partial merchandising of appliances, and the rebuilding of company sales forces.

The increase in "unsold markets," said Restofski, is attributed to the fact that "people have a greater willingness to be convinced that the electric way is the best way to live and work," and because the competitive position of the electric utility industry has greatly improved. He also noted that "new electric applications are developed faster than old ones come into general use."

"Many electric companies have stepped up their sales programs substantially," he said, and, quoting from the sales program of one company: "We are faced with a tremendous selling job; 40 per cent of our total customer group has grown up, married, and begun housekeeping, and has never had the experience of living in a buyer's market period."

### Detroit range merchandising plan includes free wiring

Restofski mentioned Detroit Edison's 5-year, \$3 million electric range program. He said that "it is based on the premise that the range is a key appliance which paves the way for other appliances and increases the ability to sell electrical living in general and that, because of this, heavy promotion costs are justified. Effective March 20 and for 10 months,

the company will provide free wiring, including both entrance and circuit, where a range or clothes dryer is installed. It has gone into range merchandising throughout its area, but with the particular objective of developing the mass market in heavily populated metropolitan Detroit, where range saturation is lowest. Its promotion will include weekly newspaper ads, television, use of 180 billboards, and dealer cooking shows. Its 5-year objective is to add 120,000 electric ranges to its lines, bringing saturation up from 26% to 37%."

### Stepped up industrial sales promotion

Robert C. Hinton, general sales manager, The Cleveland Electric Illuminating Company, told his EEI audience that "industrial selling of electricity has changed considerably in the last ten years."

"The traditional pattern of operation of a power sales department was based on the salesman making a per-

sonal inventory of his customer's plant and its various manufacturing operations. Since 1940, a number of important changes have taken place that prevent us from continuing this traditional pattern."

Some of the changes, cited by Hinton, are:

**Security.** During the war, it was difficult to inspect industrial plants because of security reasons. Even today, parts of many plants, and even some entire plants, are still closed to the industrial salesman.

**Size of plants.** Plants today are much larger than they were ten years ago. In the Cleveland area, for example, the area of some plants range from 500,000 square feet to 1,500,000 square feet of floor area.

**Increase in number of plants.** There has been a 56% increase in production workers throughout the United States. The value added by manufacture rose 204% in the nation from 1939 to 1947. "Since each worker today produces more than he did in

*For outstanding promotion of all-electric kitchens during 1949, Pennsylvania Power & Light Co. received first prize in George A. Hughes Awards. In photo, l. to r., are: Dwight Anneaux, manager of utility division, Hotpoint; H. H. Brennan, manager, residential sales dept., Penn. Power & Light; George Whitwell, chairman, EEI prize awards committee.*



1939, it means that there are just more plants."

Hienton then stressed the necessity of an organization to do the job of securing more complete sales coverage. "In order to organize for the job, we must first examine our market—that is, the number and size of our industrial customers. Second, we must determine our objectives, and third, we must determine the size and method of operation of our industrial sales force in order to attain these objectives," stated the speaker.

#### The outlook for appliances

In an address on "What is Needed in Selling Appliances," James J. Nance, president of Hotpoint, Inc., stated that the immediate outlook for appliances is bright. "Our success will depend on our own imagination, resourcefulness, and energy."

One factor in the bright outlook is in the field of new residential electricity customers. "Two million homes were added to the power lines last year. They represent a practically virgin market," said Nance. He also pointed out a few facts on the market saturation of various appliances . . . 8 million wired homes still using the old fashioned ice box . . . 12 mil-

lion homes without electric washing machines . . . only 18 per cent of the wired homes have electric cooking.

"Many new major appliances have been developed that have created entirely new markets," said the speaker, mentioning the dishwasher "which produces approximately 20 per cent more revenue than the electric range and also practically necessitates the installation of automatic water heating equipment. The acceptance of this appliance is accelerating rapidly. Thirty-three per cent of all dishwashers in use at the end of 1949 were sold during 1949. The dishwasher saturation is less than 1½ per cent . . ."

"The automatic washer has a saturation of only 5.7 per cent.

"The automatic dryer is another new appliance which produces a revenue equal to the electric range. The saturation of dryers is only 0.6 of 1 per cent.

#### Appliances are under priced?

Mr. Nance then got onto the subject of postwar and prewar appliance prices. "On the average, appliances today cost but 50 per cent more than prewar, and some are up as little as 30 per cent. By comparison, based

on figures I checked this week, the cost of home construction is up 204 per cent; so called low priced automobiles are up 85 per cent; food is up 107 per cent; clothing 84 per cent; and home furnishings 83 per cent. Actually appliances are underpriced today among manufactured goods. I hope, but am not at all sure, that we can hold our present prices against the steady upward pressure of costs."

In conclusion, Nance mentioned some national figures which are uniformly favorable to the industry's market.

"Average family income is running double what it was before the war. In addition, our market contains 25 per cent more families than prewar. Finally, the people of our country want a progressively higher standard of living and are willing to work to achieve it."

#### Selling the use of appliances

A few basic fundamentals on what constitutes real salesmanship were presented by T. J. Newcomb, sales manager, Electric Appliance Division, Westinghouse Electric Corporation, in his talk "Selling the Use of Electric Appliances."

"The first fundamental is to have a good product display. Another is a sales organization well trained in the knowledge of produce, with an organized presentation which will qualify the prospect, develop interest, create desire of asking for the order, close the sale, etc. . . . These are, of course, vital and should be the minimum requirement for real salesmanship. Yet, they lack the most important requisite of all—live demonstration."

Mr. Newcomb emphasized the fact that the salesman should not only tell the housewife what his product will do, but let her do the actual demonstration in her own home.

#### The rise of the clothes dryer

Roger H. Bolin, assistant to the vice president, Westinghouse Electric Corporation, discussed the growing popularity of the clothes dryer.

He gave the following reasons why "the electric clothes dryer is one major appliance that was born wearing

to Page 69 →

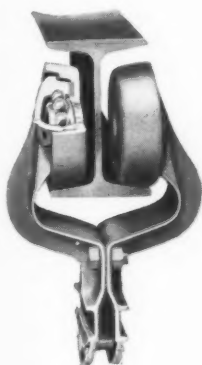
*Winners of 111 cash awards in the \$21,000 nationwide planned lighting competition, sponsored by G-E's electric lamp department, were announced at the EEI meeting. Contest judges were, left to right: Prof. E. M. Strong, Cornell University's School of Electrical Engineering; J. Byers Hays, architect, and Paul C. Mehnert, consulting engineer, both of Cleveland, Ohio.*



# LINK-BELT overhead trolley conveyors

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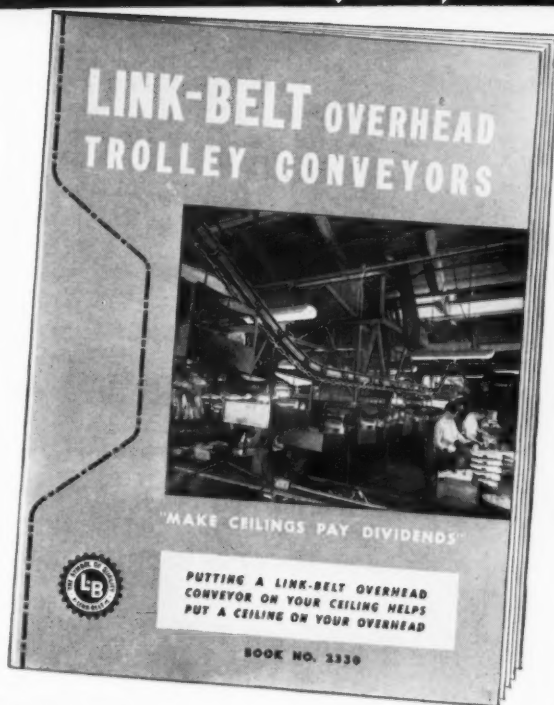


Link-Belt overhead conveyor trolleys are the last word in rugged strength, simplicity, smooth operation. Note the construction, with drop forged steel wheels and brackets and a full complement of ball bearings operating in hardened steel races, assuring long life and trouble-free operation. Send for Folder No. 2241-B.

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Link-Belt makes practically all types of conveyors (see below) as well as a complete line of power transmission machinery. We suggest you discuss your problem with a Link-Belt engineer, who will offer practical advice. Get in touch with the Link-Belt office nearest you.

This new book shows how Link-Belt overhead conveyors have solved many conveying problems economically in different types of plants. It illustrates, with on-the-scene photographs, how Link-Belt conveyors save floor space, release manpower for productive labor, coordinate various operations. Write for it!



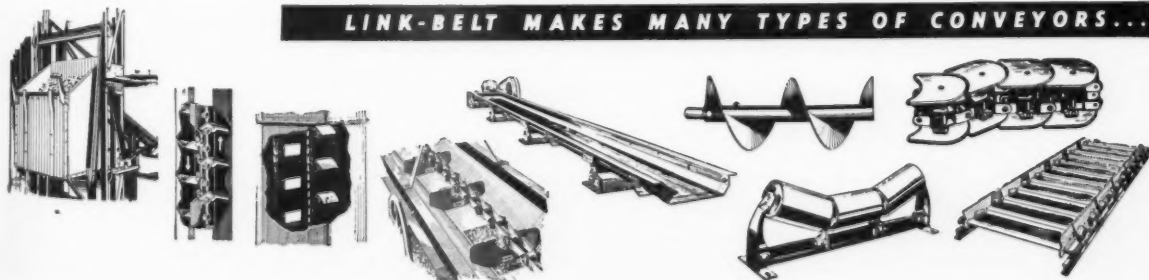
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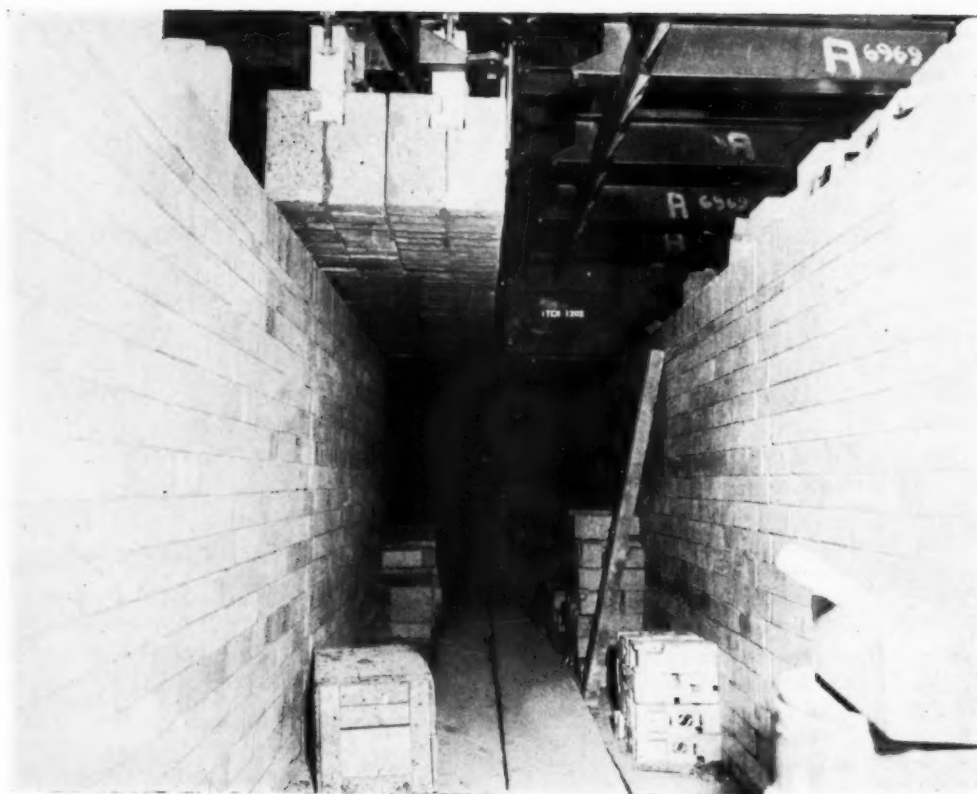
**LINK-BELT MAKES MANY TYPES OF CONVEYORS...**



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# Refrigeration equipment men hold annual meeting

AT the opening of the annual meeting of the Refrigeration Equipment Manufacturers Association, held in Chicago, March 30, 31, and April 1, at the Edgewater Beach Hotel, K. B. Thorndike, REMA's retiring president, assured the members that the Association's future is very bright.

Mr. Thorndike, who is also vice president of Detroit Lubricator Co., stated that the Association was strengthened considerably during the past year. "For many years REMA had a part-time executive, in fact until last year. We did not own a piece of furniture or a typewriter until last year. Our name wasn't even on an office door. Our public relations work was done on the outside with money that came from members' voluntary subscriptions." He pointed out that today the Association has a modern office at 1346 Connecticut Ave., Washington, D.C., with full-time executive secretary, a full-time public relations and show director, a full-time manager of REMA's statistical and credit service, and other office help.

## Association objectives

### brought up to date

The present objectives of REMA, as brought up to date by Thorndike, are as follows:

"To promote the general welfare of the refrigeration and air conditioning industry; To collect and disseminate pertinent, lawful information of value to the industry; To assist in the development of product standards; To help develop new and better safety codes; To promote the growth of the industry by developing a wider market for its products; To act as a clearing house for the problems of product sections and other segments of the Association; and To cooperate with other industries and trade or-

ganizations on problems of mutual concern."

## REMA joins standards association

The Association is now a member of the American Standards Association which, it was stated, has the following standing projects related to the industry which REMA represents:

Standards B-9 on mechanical refrigeration, Standards B-38 on refrigerators and freezers, Standard B-53 on refrigeration nomenclature and Standards Z-5 on ventilation.

## Promotion projects underway

The food freezer, water cooler product, and milk cooler product sections of REMA are developing promotional programs designed to stimulate the sale of these products. "These programs will, of course, also promote the sale of all components used in these end products," said Thorndike.

## Relation of credit to sales

In the past "it has been the custom of salesmen to look upon the credit

department as one of those necessary evils," recalled E. T. Polsten, credit manager, The Bush Manufacturing Co., in his talk "Relation of Credit to Sales."

"Times are changing," said Polsten, "and with money now tighter than it has been, the salesmen are aware that the credit man is fully aware of the need for increasing the volume of sales where the break-even point is rising higher in practically all phases of industry in order that profits can be realized."

Credit management is important to salesmen "because business, as we know it in America, is transacted largely on credit. It has been claimed that 90 per cent of all business transactions involve the extension of credit by the seller to the buyer. . . . The credit manager is an investor of his company's goods in the customer, and, as such, is entitled to the same rights as a bank or other loaning agency as to the financial and credit responsibility of the buyer. To be sure, this information is available

*REMA's officers for 1950 are, left to right: W. A. Siegfried, vice president; K. B. Thorndike, retiring president; R. H. Israel, president elect; W. J. Stelpflug, treasurer; and J. E. Dube, secretary.*



through credit reporting agencies, but a salesman is in a position, through his personal contacts, to obtain and pass on pertinent information so much more quickly that this will enable his credit department to be of great help to him. That is why progressive management today requires the closest cooperation between credit manager and the salesman; why credits and sales are being coordinated to a greater extent than ever before, and why frequent consultations and conferences between the credit and sales departments are necessary if the business is to prosper and grow."

In conclusion, Polsten emphasized that "through full cooperation, the credit manager can be a booster of sales by pointing out those accounts

which are showing unfavorable trends in their activities, and those who are really progressing, so that the salesman can readily increase his volume of profitable sales." He also urged member companies to see that their credit men take an active part in REMA's credit program.

#### Safety considered

Cyrus W. Miller, executive secretary, Refrigeration Industry Safety Advisory Committee, presented a lengthy discussion of the Committee's work. He pointed out that RISAC "does not promote regulations or legislation but cooperates with other organizations and agencies in seeking to insure that such laws and ordinances as may be adopted will be in the public interest and will ex-

tend to the public the benefits resulting from a more widespread use of mechanical refrigeration."

He divided the work of RISAC in two classes. "First, comes the uniform acceptance of the ASA-B9 Safety Code for Mechanical Refrigeration; the second category is the dissemination of information on safety matters applying to the refrigeration industry, to its members, and to other interested parties. In this second category are included such matters as water conservation, or laws and regulations other than safety which affect our industry."

#### Two kinds of democracy

Louis Seltzer, editor, *The Cleveland Press*, told Association members that we have a weakness in that we are confused on the meaning of democracy, pointing out that there are two kinds of democracy, political and industrial.

We are generally doing all right in industrial democracy—we go to work and do our jobs. However, we don't find time to sit on school boards, city councils, or take an interest in the Federal government. The consequence, warned Seltzer, may be that "If we are not careful to preserve our democratic processes, we can lose our freedoms and our standard of living."

#### Eleven new officers

New officers of the Association elected at the annual meeting are as follows:

President, R. H. Israel, sales manager, Refrigeration Division, Virginia Smelting Co., West Norfolk, Va.; Vice President, W. A. Siegfried, president, Superior Valve & Fittings Co., Pittsburgh, Pa.; Treasurer, W. J. Stelpflug, vice president, Hussmann Refrigeration, Inc., St. Louis, Mo.; and Secretary, John E. Dube, president, Alco Valve Company, St. Louis, Mo.

#### Next all-industry show in 1951

The 7th all-industry refrigeration and air conditioning exposition, sponsored by REMA, will be held in Chicago, November 5-9, 1951. The last exposition was held in Atlantic City last November (see December, 1949, *finish*).



"OH, IT'S NICE ALRIGHT, BUT DON'T YOU THINK THE OLD FASHIONED ICE-MAN HAD MORE TO OFFER?"

# Safe Transit case histories

brief reports on money saving and damage reduction results being obtained  
by users of the National Safe Transit Committee pre-testing program

**I**NFORMATION is starting to flow to *finish* from users of the National Safe Transit pre-testing program for PACKAGED PRODUCTS outlining specific examples of beneficial results to the cooperating companies. Following are a few "cases" which serve to demonstrate what may be expected when the pre-testing program is used as recommended.

## Case A (automatic washer)

In the case of a newly-designed automatic washing machine, Safe Transit tests revealed that a high percentage of units would be received at their destinations with the motor out of position, causing them to be inoperative. The fault was found to be in the design of a mounting bolt which would not, in all cases, hold the motor in place after vibration and handling shocks. The bolt design was corrected, and field reports indicate the percentage of damage is negligible. The savings in damaged goods and the prevention of loss of customer good-will cannot be estimated. This is one instance where Safe Transit prevented a real catastrophe by predicting it in advance.

## Case B (automatic washer)

On a newly-designed rigid-mount automatic washing machine, Safe Transit tests revealed a structural weakness on the frame caused by welding and support bolts — before a single product had been shipped. Changes were made to correct this trouble, and field reports show that the percentage of damage on arrival is negligible.

## Case C (a new refrigerator)

In another instance, Safe Transit tests headed off an epidemic of actual

functioning failures in the case of a newly-designed refrigerator. By means of Safe Transit tests, the manufacturer discovered that under normal shipping and handling conditions the condenser mounting bolts would loosen, causing the motor to fall out of position. A revision of the design

## Latest Certified Companies

American Stove Company  
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Andes Range & Furnace Corporation  
Geneva, New York

Caloric Stove Corporation  
Topton, Pennsylvania

Conlon-Moore Corporation  
Chicago, Illinois

Crosley Division, Avco Corporation  
Richmond, Indiana

Moffats, Limited  
Weston, Ontario, Canada

Thor Corporation  
Chicago, Illinois

(see complete listing on page 72)

of the mounting unit enabled the packaged appliance to pass Safe Transit tests.

## Case D (electric range)

By application of Safe Transit tests to ranges produced at the Mansfield, Ohio, plant of Westinghouse, the company reports savings for 1949 of \$20,600, representing savings in bracing and packaging materials. Company spokesman says, "At the same time, we eliminated the guess work of knowing that the product would ride through normal handling

and transportation shocks with negligible damage."

In one instance, by means of Safe Transit tests, Westinghouse was able to replace a dollar's worth of bracing from a range by adding 50¢ to the cost of packing, thus making a net saving of 50¢ per range. More important, damage losses on this particular range were greatly reduced.

## Case E (a distributor's point of view)

Typical of the favorable reaction to manufacturers' Safe Transit efforts is the following comment made by K. A. Erskine, manager of Stubbs Electric Company, a distributor of Lindemann & Hoverson appliances. Says Mr. Erskine, "There has been so little damage to L & H products shipped to us that it is hardly worth mentioning. In the last six months, we have had no damaged ranges, one slightly damaged refrigerator, and three slightly damaged table top water heaters. This is out of a little over 700 pieces of merchandise (less than 0.6%). We consider this almost too good to be true, and are extremely grateful for the way L & H merchandise is being crated."

A. J. Lindemann & Hoverson Co. is one of 39 major appliance manufacturers who are cooperating in the National Safe Transit Program.

Copies of a 20 page two-color booklet, "The National Safe Transit Program", giving complete information on the appliance industry's cooperative pre-testing program are now available. Write direct to finish, or to the National Safe Transit Committee, 1010 Vermont Avenue, N.W., Washington, D. C. Booklets are available in quantity from the National Safe Transit Committee at only fifteen dollars per hundred.

See Safe Transit Letters . . . Page 60→



Reading clockwise: G. M. Moss (left foreground) and R. C. Peters, of Fulton Sylphon; H. H. Hall and R. M. Phillips, Alcoa; Clem Schiebert, Metals Stamping & Engr.; Peter Jack, Res Mfg.; Herman Lewitzke, Metals Stmpg.; J. S. Kolarik, Alcoa; and J. C. McKlveen and J. C. Clark, Naval Ordnance.



## SNAPSHOTS OF PM

Technical Symposium Presses

(see story April 1)

Charles Kaye, Metal Specialty; T. J. Fadgen and Harvey Rissman, GMC Ternstedt Division; W. J. Primrose, Dickey-Grabler; Hunter Morrison Jr., Morrison Products; W. L. Galvin and Wm. Primrose Jr., D-G; R. W. Breckenridge, Automatic Die; G. S. Eaton, Nat'l Tool & Die Mfrs. Assn.



Don Yerden, Dail Steel Products; W. E. Buck, Continental Steel; H. A. Hackathorn, Mullins Mfg.; L. W. Coleman, Lake Erie Engr.; Louis E. Plack and Ben Kaul, Mullins Mfg.; E. A. Hahn, Lyon, Inc.; David Dail and Don Wheelock, Dail Steel.

finishfotos



H. W. Carlisle, Clearing Machine; Don Beal, Youngstown Sheet & Tube; H. A. Holbertson and O. Q. Leavy, Youngstown Metal Products; J. J. Wolf, YS&T; R. L. Gelder, Armco Steel; J. A. Leake, J. L. Coffey and A. B. Leake, Leake Stmpg.; and C. Linduska, Clearing Machine.



R. K. Sedgwick, American Steel Foundries; G. O. Hunt, Salisbury Axle; Ed Chambers, Oatis Machinery; J. R. Macon, Pennsalt; F. L. Griffin, Harrison Radiator; J. C. McComb, Steel Processing; J. H. Oatis, Oatis Machinery; J. E. Bush, Elmes Engr.; and Richard Clark, Salisbury Axle.



## OF PMI MEMBERS

um Pressed Metal Institute  
ory April issue)

J. A. Perry, Canadian Dept. of Mines; R. A. Hirschert, Barth Stmpg.; Ralph Boyle and Eugene Corriveau, Nat'l Stmpg.; Guy Slade, Bethlehem Steel; Wm. Hall, DuPont; A. P. Lucas, Bethlehem Steel; V. M. Darsey, Parker Rust Proof; and J. C. Filonowicz, Stamping Service.



A. H. Scholz, H. B. Morse, of E. W. Bliss; J. H. Alden, Alcoa; G. H. Enzian, Jones & Laughlin; W. O. Yates, Reynolds Metals; H. S. Lawrence, Hydro-Cam; J. D. Kishler, Dept. of Commerce; D. C. Vibber, A. T. Kosciusko, Rockwood Sprinkle; H. J. Miller, Hydraulic Press.

finishfotos



Ernest Kopecki (left), Pennsalt; W. A. Lloyd, Iron Age; W. P. Fouts and T. C. Wood, Acklin Stmpg.; Frank Humberger, Technical Metal; Wilfred Williams, C. C. Miller, Acklin; Wm. P. Von Behren, Swartzbaugh Mfg.; Walter Baird, Toledo Pressed Steel; Ray Peterson (center), Peterson Engr.



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## Carloading methods . . . . (Part 2, Sections 2-5)

**Section 2: carloading methods for refrigerators**

**Section 3: carloading methods for water heaters, bathtubs (on end), sinks (on end), and other high loads**

**Section 4: carloading methods for small appliances in cartons, crates and boxes**

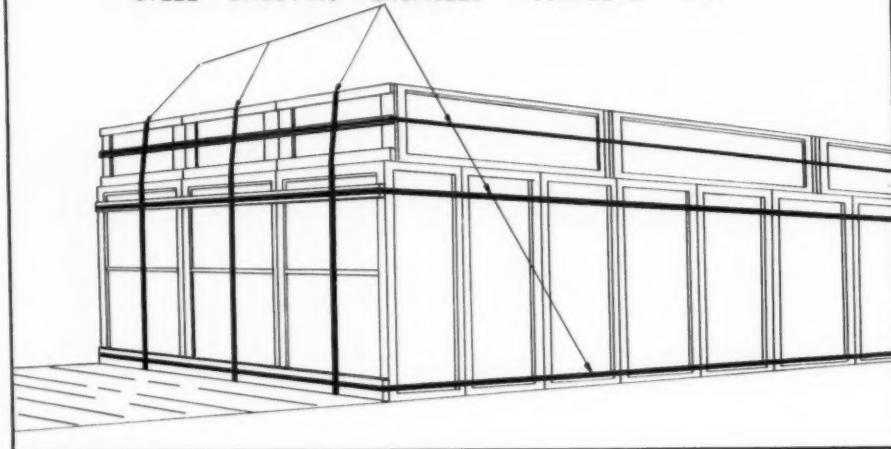
**Section 5: carloading methods applicable to stop-over and miscellaneous loads**

Editor's Note: In Part I, Section 1, which appeared in April *finish*, thirteen drawings and seven photographs were used to show loading and bracing methods for stoves, ranges, home freezers, kitchen cabinets, bathtubs (loaded flat), and sinks (loaded flat). Part 3, Section 6, will appear in June *finish* and will cover materials handling methods. These carloading methods are the recommendations of the Loading Research Division of the National Safe Transit Committee which has stated that "If shippers follow these recommendations, experience has shown that their loss and damage resulting from loading practices will be acceptable minimums."

*Photo shows an anchored load of bathtubs shipped on end. Strapping are located on strong sections of crate.*



## STEEL STRAPPING ENCIRCLES COMPLETE UNIT



## Section 2

### FLOATING LOAD

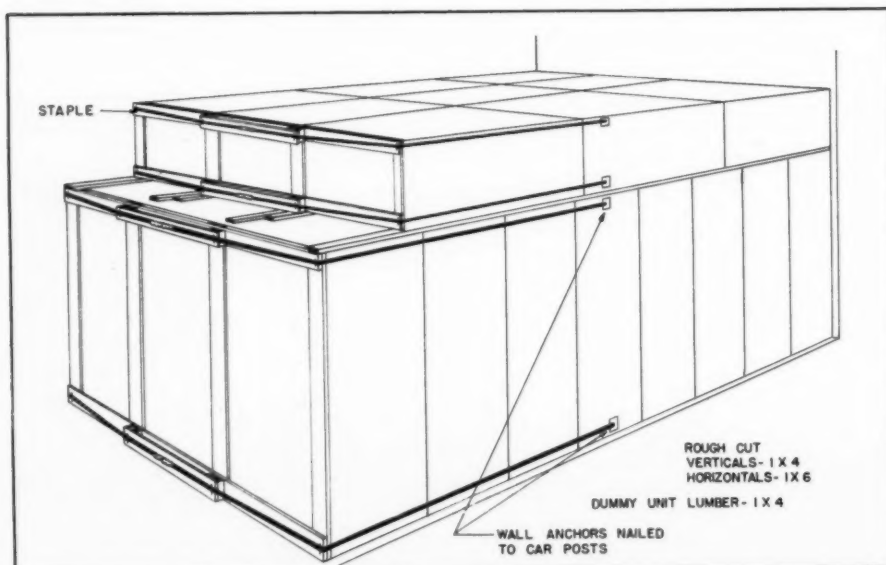
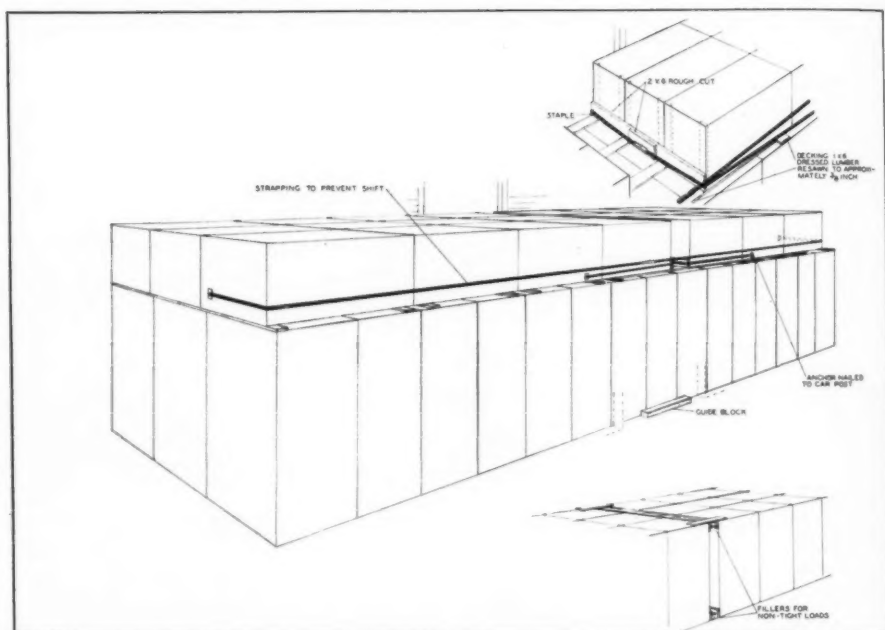
#### XIV

*This floating load of refrigerators has horizontal wood members nailed to containers at each end of half-car load unit.*

### WALL-ANCHOR LOAD

#### XV

*When the floor layers are not tight, fillers are necessary for the space between the units. Fillers are used between upper layer (units on backs) and lower layer so that upper and lower units do not touch. Fillers under doorway units on upper layer may be placed so that bases contact bracing to which strapping is applied.*



### WALL-ANCHOR LOAD

#### XVI

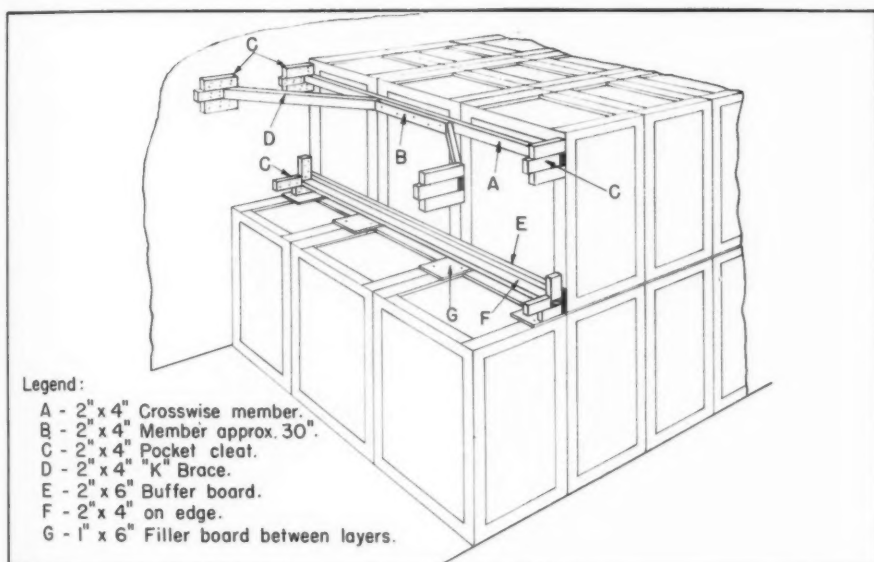
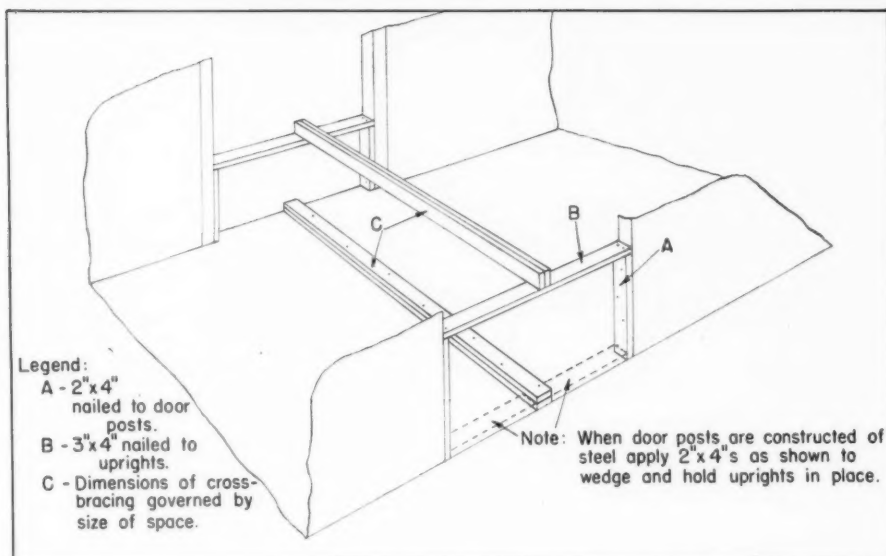
*This shows a wall-anchor load (half-car unit) of refrigerators stowed two layers high.*



## BRACING

### XVII

An example of wood bracing in the doorway area. Can be used when it is impractical to nail bracing to the container.



## BRACING

### XVIII

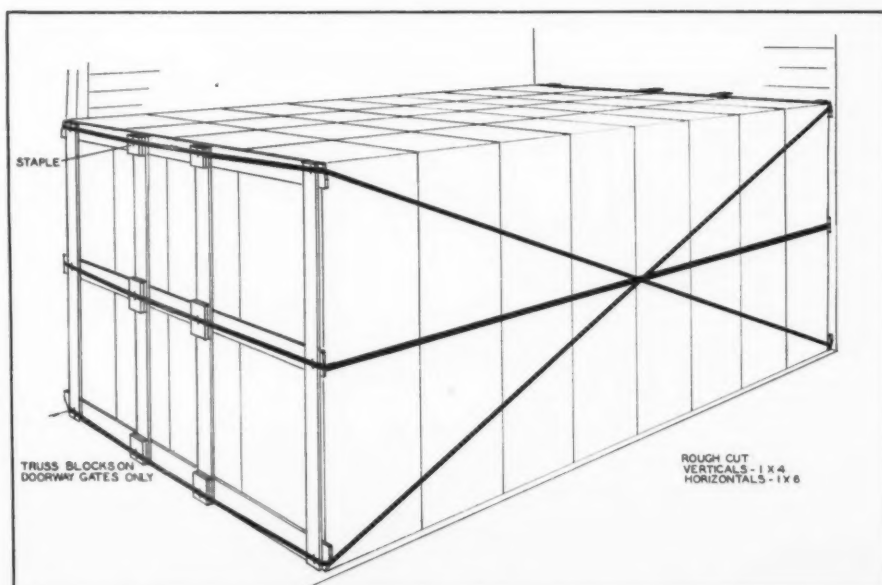
Illustrating the use of a "K" brace for partial second layer loading.

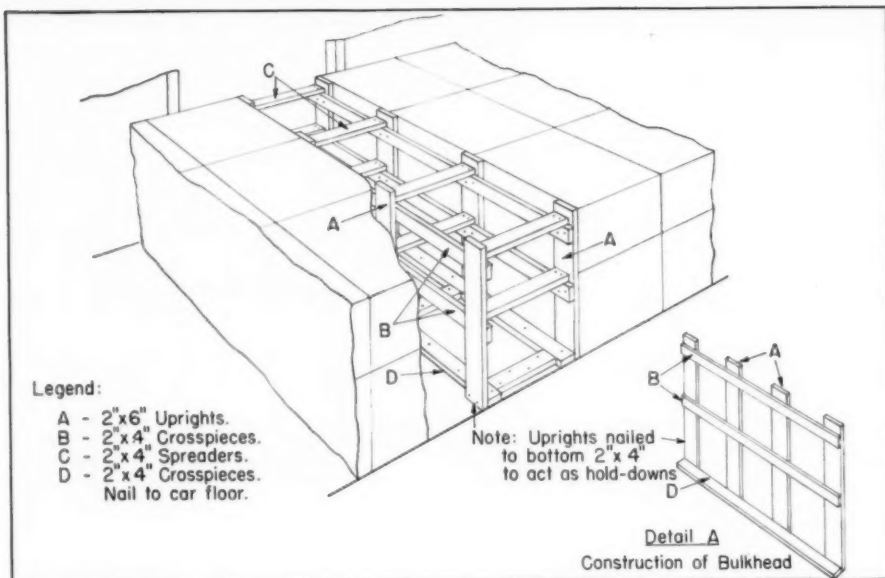
## Section 3

### FLOATING LOAD

#### XIX

When loads are high, and damage is possible through tilting of load, steel strapping applied diagonally at sides of each unit effectively stabilize and bind products into a single unit which is free to move without racking. Crossed strapping must be fixed to tops and bottoms of gates to prevent displacement. Note mitered corners on extended top and bottom gate horizontals.





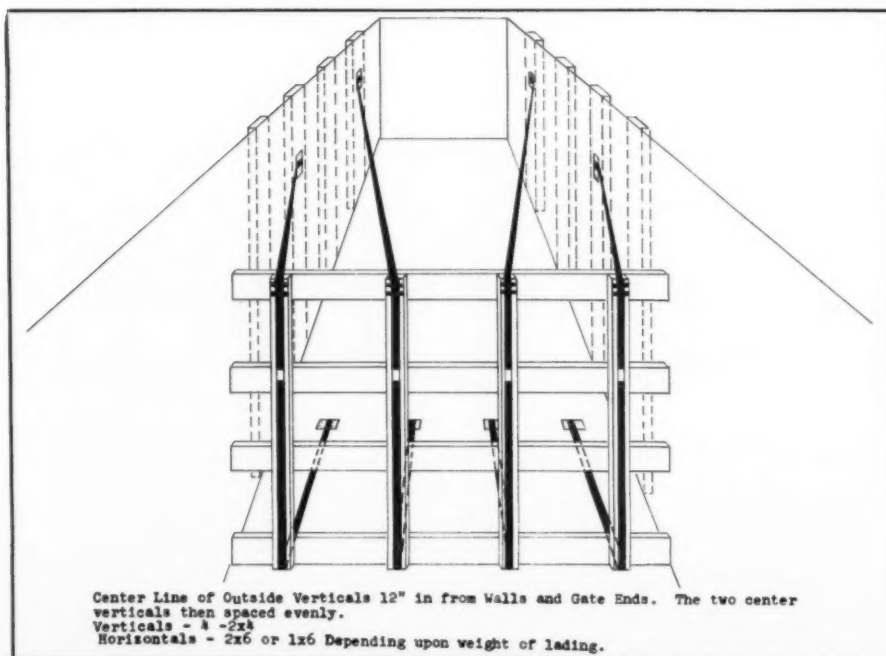
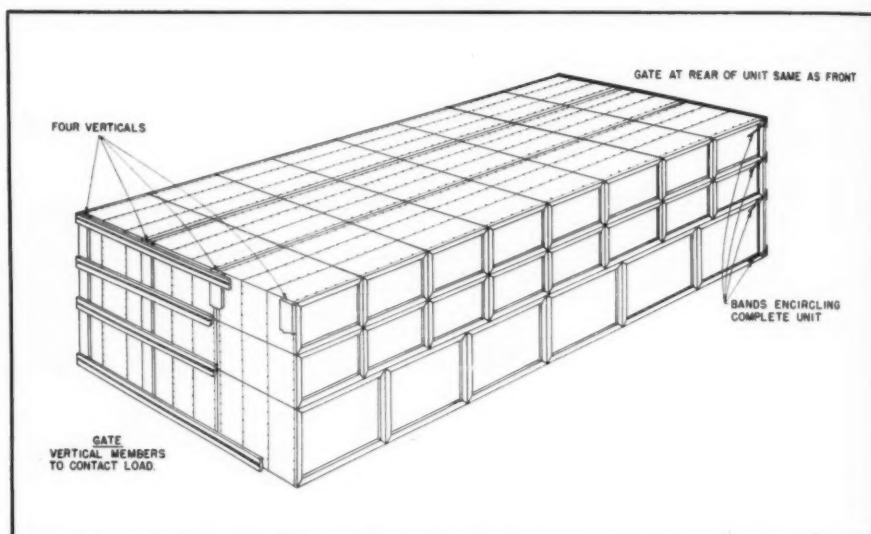
## CRIB BRACING XX

Showing the use of fabricated bulkheads for bracing in doorway areas.

## Section 4

### FLOATING LOAD XXI

This illustration applies to all small containers. Boxes must be stowed tightly together to eliminate lengthwise slack in car. Gates are installed at each end of half-car unit. Members should bear on strong point of containers. The number of members will be determined by size of containers.



## ANCHOR LOAD XXII

Showing a principle of a floor-to-wall anchor loading method adaptable for all loads of medium height. Gate adapts itself to pre-fabrication and provides for variation in car widths.

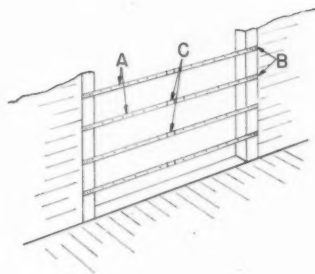
## DOORWAY PROTECTION

### XXIII

Right: Illustrating the use of steel strapping for doorway protection.

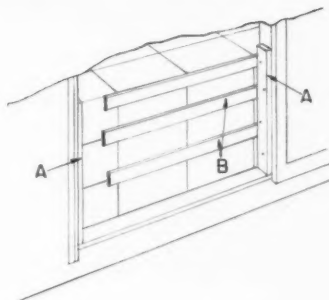
### XXIV

Extreme right: Illustrating use of lumber for doorway protection with special emphasis on the placing of horizontal members opposite the intersection of layers.



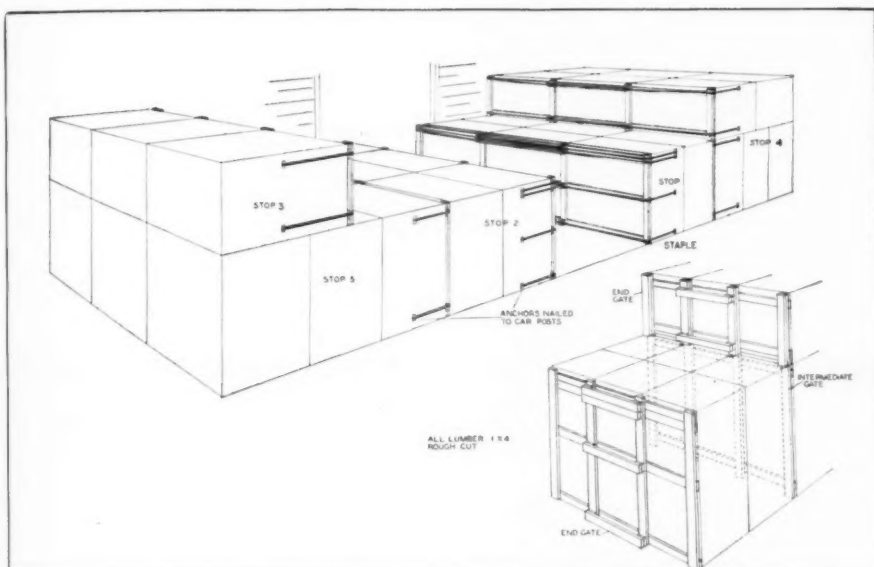
Legend:

- A - Perforated strap.
- B - Nail to doorposts with 4-8d-6ga. nails, or use anchor plates.
- C - Tension and seal.



Legend:

- A - 2" x 3" Upright nailed to doorpost.
- B - 1" x 4" or 1" x 6" face members located at intersection of layers.



## Section 5

### WALL-ANCHOR LOAD

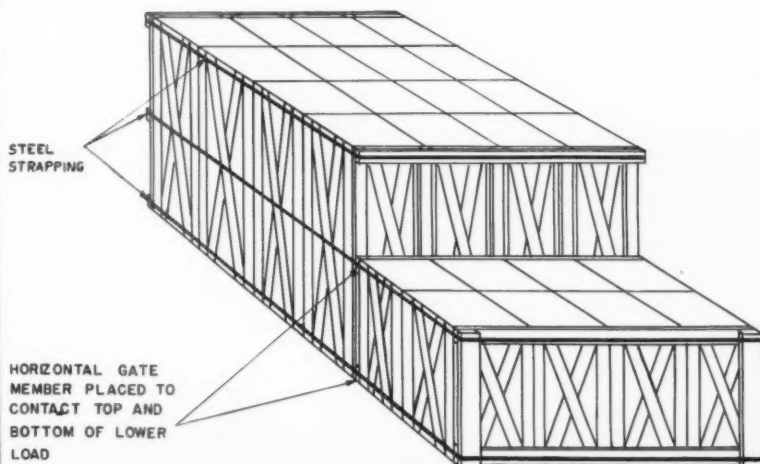
#### XXV

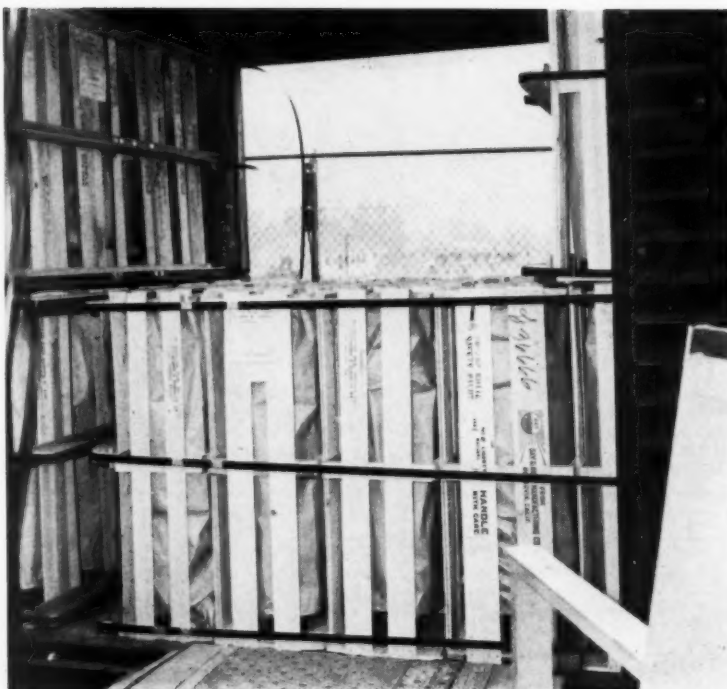
Showing a typical suggested load for 5 destinations. Note that last destinations are at extreme ends of car. Each individual consignment is separately braced and blocked. No re-bracing is necessary as consignments are unloaded.

## FLOATING LOAD

### XXVI

Illustrating the use of wood fillers between packaged products of unequal size. This serves as protection, particularly for the larger containers. This principle applies to all types of loads.





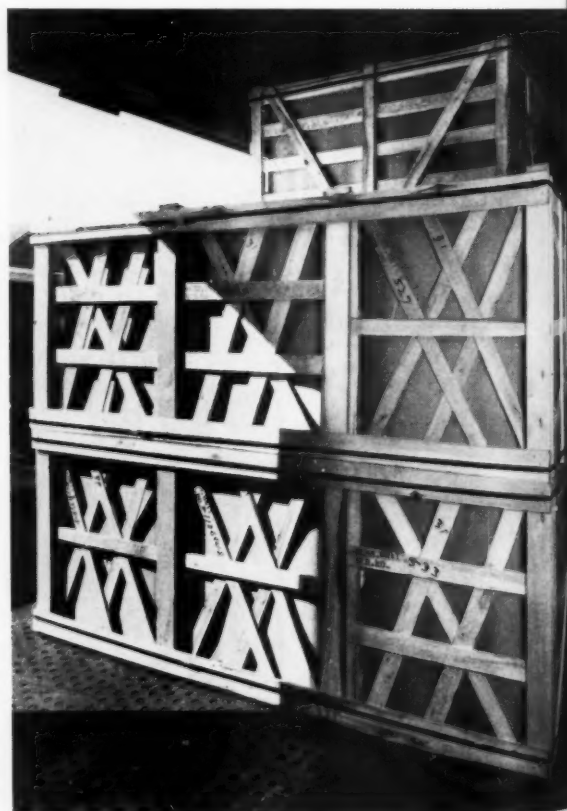
## PRACTICAL APPLICATIONS OF PRECEDING DRAWINGS

*Typical strapping method for load of  
water heaters.*

*Floating load of refrigerators with top layer  
stowed on backs. Similar to drawing XIV.*



*Photo shows a floating load of home freezers  
with a partial third layer.*





# for PROOF that General Boxes CUT COSTS... let's **CHECK THE RECORD**

No. 7105

Gross Shipping Weight  
Old Package..... 410 lbs.  
\* New Package..... 364 lbs.  
Weight Saving..... 46 lbs.

No. 7038

Gross Shipping Weight  
Old Package..... 120 lbs.  
\* New Package..... 104 lbs.  
Weight Saving..... 16 lbs.

No. 7023

Gross Shipping Weight  
Old Package..... 39 lbs.  
\* New Package..... 34 lbs.  
Weight Saving..... 5 lbs.

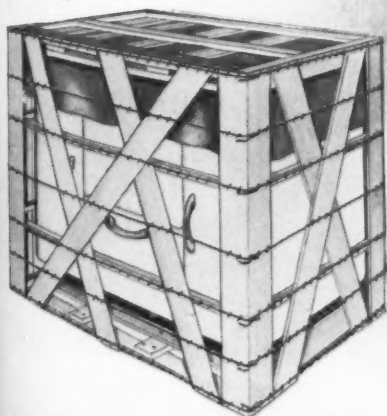
No. 7147

Gross Shipping Weight  
Old Package..... 95 lbs.  
\* New Package..... 83 lbs.  
Weight Saving..... 12 lbs.

## General Engineered CONTAINERS PROVIDE AVERAGE SAVING OF 19.75 LBS.

Here's concrete evidence of savings!  
4 widely diversified products from the  
case history files of our Designing and Testing  
Laboratories show an average weight  
saving of 19.75 lbs. Many of the hundreds  
of case histories on file show even  
greater weight savings!

Better check today on this vital subject.  
We'll be glad to help design a more  
efficient container for your product.



\* "New Packages" were designed in our  
DESIGNING and TESTING LABORATORIES

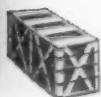
## General BOX COMPANY

engineered shipping containers

GENERAL OFFICES:

514 N. Dearborn Street, Chicago 10, Ill.

DISTRICT OFFICES AND PLANTS: Cincinnati, Denville, N. J.,  
Detroit, East St. Louis, Kansas City, Louisville, Mer-  
idian, Miss., Milwaukee, Sheboygan, Winchendon.  
Continental Box Company, Inc.: Houston, Dallas.



General  
Wirebound  
Crate



General  
Nailed  
Box



General  
Corrugated  
Box



General  
Cleated  
Corrugated  
Container



General  
All-Bound  
Box



General  
Lift Pallet  
and  
Pallet  
Box



General  
Walk-In  
Type  
Box

## New Supplies and Equipment

### E-1. Read relative humidity and temperature at a glance



A new direct reading humidity and temperature indicator is now coming off the production lines. It shows at a glance the relative humidity and temperature of the air to which it is exposed.

The humidity scale is graduated into 10 equal divisions from 0 to 100% over an area of  $2\frac{1}{2}$  inches. The thermometer is a red liquid filled, lens front type and is accurate to within 1 degree at 70 degrees F.

Overall dimensions are  $5\frac{3}{8}$  inches long by  $3\frac{5}{8}$  inches high by  $1\frac{11}{16}$  inches deep.

### E-2. New insulating varnish

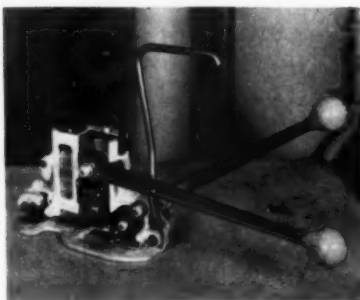
A new insulating varnish that combines the desirable characteristics of many special formulations has been developed to permeate deep coil layers and quickly bake hard to form an oil-proof, solidly bonded winding. It is formulated for stability in storage

### More Information

For more information on new supplies and equipment reviewed here, fill out the order form on this page.

and dip tank. Its solvent does not attack magnet wire. Specific gravity for use is optional.

### E-3. Automatic seal feed tool

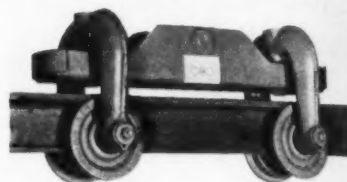


A new automatic seal feed tool for  $\frac{3}{4}$ " strapping has recently been announced. This new tool, which is said to be the lightest ever built for  $\frac{3}{4}$ " strapping, weighs only 15 lbs. It has been field-tested over the past 18 months.

The new tool tensions and cuts the strapping; automatically feeds the seal and crimps it to complete the operation. The seal magazine is designed for quick loading and holds a clip of 75 seals. The tool can be released at any point in its operating

cycle if it is necessary to relocate the strap.

### E-5. New tramrail trolley design



An improved tramrail trolley for use on hand or electric powered tram-rail systems, transfer bridges, and tramrail cranes is announced. Operator fatigue is said to be reduced and payloads increased through elimination of dead parasite weight and reduction of rolling friction.

Drawbar pull on the heavier capacity trolleys after normal break-in period is said to be reduced to 15 pounds per ton to start the load rolling and 10 pounds per ton to maintain momentum. Factors of safety built into the new trolleys are reported to enable them to take shock loads considerably higher than their rated capacity. The trolley yoke swivels freely on a rolled steel king-pin to eliminate binding of wheel flanges on curves and switches of short radii.

### E-6. Variable high voltage RF power supply



This new power supply delivers from 1KV to 40KV output, either negative or positive polarity. For industrial users and research engineers who need the advantages of a variable

#### FINISH

360 N. Michigan Ave.  
Chicago 1, Illinois

Please forward to me at once information on the new supplies and equipment and new industrial literature as enumerated below:

No. \_\_\_\_\_ No. \_\_\_\_\_ No. \_\_\_\_\_ No. \_\_\_\_\_

No. \_\_\_\_\_ No. \_\_\_\_\_ No. \_\_\_\_\_ No. \_\_\_\_\_

Name \_\_\_\_\_ Title \_\_\_\_\_

Company \_\_\_\_\_

Company Address \_\_\_\_\_

City \_\_\_\_\_ Zone \_\_\_\_\_ State \_\_\_\_\_

voltage output available for their particular electrostatic processes or methods, such as electrostatic painting, nuclear and research physics, etc.

Selector switch enables operator to select voltage outputs on a low range from 1 KV to 12 KV and on a high range from 12KV to 40 KV.

#### E-7. Humidity control

An instrument which records and automatically controls humidity has been announced by a prominent instrument company. Utilizing the psychrometric wet and dry bulb principle, the controller automatically regulated the wet-bulb (relative-humidity) depression for which it is set, regardless of any fluctuations in the dry-bulb temperature.

#### E-8. Rotary tank Magnetools



A new series of Magnetools for use in plating work is now being marketed. 360° loading and complete, instantaneous unloading are the features. Advantages stressed by the manufacturer are that the tool cannot attach itself to the tank, will not injure the tank lining, unloads instantly, is of stainless steel and Neoprene construction thruout.

#### E-9. Stronger magnetic pulleys

Improved models of magnetic pulleys are claimed to be up 50% stronger than previous models. With the

finish MAY • 1950

additional power, they are lighter in weight and have greater structural strength. The magnetic separating devices remove tramp iron from mate-

rials being processed in the chemical, metalworking, ceramic and many other industries.

#### E-10. Gummed paper tape with "strength of steel"



Five lovelies from Patricia Stevens Model Agency swing their more than 500 pulchritudinous pounds on a ribbon of the new, super strong Tape-Strap. This gummed paper tape is said to be almost unbreakable and is designed to replace steel strapping on many types of containers.

A special bond laminates two layers of Kraft paper into a "sandwich" with reinforcing fibres between them. The fibres run the long way of the strap. Tensile strength is quoted as 180 pounds for each inch of width. The new Tape-Strap is designed especially as a packaging tool.

#### E-11. Pickling equipment life extended by new alloy



Following recent announcements of the availability of sheet, plate and clad metal made from a highly corrosion-resistant stainless alloy, several metals producers and fabricators have

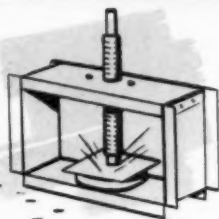
used the material to advantage in processes where sulphuric and other pickling acids are used.

This super corrosion-resistant alloy

to Page 62 →

# HOMMEL ENAMELS

*prove better than standard*  
... on **ALL TESTS.**



## Bond Test— Ground Coat

Hommel's ground coat enamels display superior adherence over a wide firing range when subjected to the standard bond test.



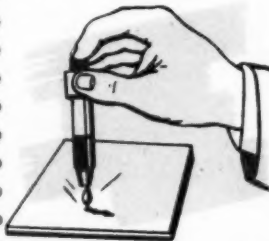
## Scratch Hardness Test—Cover Coat

Under the gram inch test, Hommel enamel plates show unusual resistance. Hommel's enamels are outstanding on surface protection.



## Thermal Shock Test —Cover Coat

Hommel's Tite-Wite (for kitchenware, stove tops, refrigerators) is not affected by extreme thermal shock. Tite-Wite successfully stands the test of repeated high temperature heatings followed by cold water submersions.



## Acid Resistance Test—Cover Coat

Hommel acid resistant frit and Tite-Wite pass the PEI Class AA test. No indication of any stain from the acid.



## Cold Test— Cover Coat

Repeated freezing and thawing tests to simulate cold wall refrigeration conditions produce no spalling failure on Hommel refrigerator enamels.



## Reflectance—Color —Cover Coat

Hommel's enamels have superior reflectance and color qualifications. Constant laboratory research tests insure maximum opacity and color stability.

**THE**  
**O. HOMMEL CO.**  
PITTSBURGH 30, PA.  
Pacific Coast Agents  
L. H. BUTCHER CO.

## Laboratory Controlled Production of Ceramic Supplies

- FRIT for Steel, Cast Iron or Pottery
- CERAMIC COLORS
- CHEMICALS
- BRONZE POWDERS
- METAL POWDERS
- SUPPLIES
- EQUIPMENT

Our Technical Staff and Samples are available to you without obligation. Let us help you with your problems.

*World's Most Complete Ceramic Supplier*



# NEWS

## GAS SALES RISE IN FEBRUARY

Total sales of gas by utilities to ultimate customers in February, 1950, were 4,084,481,000 therms, an increase of 16.1 per cent over 3,517,414,000 therms sold in February, 1949, the American Gas Association has reported. For the twelve months ended February 28, 1950, total sales of gas amounted to 36,331,085,000 therms, a gain of 10.1 per cent compared with 33,010,168,000 therms sold in the comparable period a year earlier. The Association's index of gas sales of February, 1950, was 286.2 per cent of the 1935-1939 average.

## FURNITURE MART TO USE AUXILIARY SPACE FOR SUMMER

Because of the extraordinary demand for exhibit space at the American Furniture Mart, an unusual step is being taken to meet this emergency and accommodate more manufacturers during the Summer Home Furnishings Market to be held in Chicago, June 19-29. Arrangements have been made to take care of a substantial part of the American Furniture Mart's overflow at the Chicago Arena, with the additional exhibit space co-ordinated with the Mart in all directories, advertising and publicity for the Summer Market. Approximately 30,000 square feet will be available for exhibits at the Arena.

"The American Furniture Mart's waiting list has been growing for the past seven years", said Frank S. Whiting, vice president in charge of

leasing. "While the home furnishings industry has been operating at a high rate both at the manufacturing and retail level, there is still a big demand for display space looking forward to the period when more intensive selling will be needed", he said.

## LINK-BELT VICE PRESIDENT

Link-Belt Company announces that at a recent meeting of the Board of Directors, David E. Davidson was



elected vice-president for sales, with headquarters at executive offices, 307 N. Michigan Ave., Chicago (1). All officers who served last year were re-elected.

Davidson, a mechanical engineering graduate of Armour Institute of Technology (now I.I.T.), has been general manager at the company's Pershing Road plant, Chicago, since 1947. He entered the employ of the

company's Caldwell plant, Chicago, in 1924 in the shop.

## NEW P. A. FOR WARM AIR HEATING MANUFACTURER

The appointment of Adolph S. Pezoldt, Jr., as purchasing agent of Morrison Steel Products, Inc., Buffalo, was announced today by Sam Morrison, president.

Morrison Steel Products manufactures the MOR-SUN line of warm air heating equipment and other steel products, in addition to producing automotive stampings for White, Mack, Brockway, and International Harvester.

## WHIRLPOOL NEW NAME FOR 1900 CORP.

The new name "Whirlpool Corporation" has been adopted by one of the leading manufacturers of home laundry equipment, the Nineteen Hundred Corporation, St. Joseph, Mich.

The change, effective July 1, was announced by Louis C. Upton, founder and chairman of the board of directors, and Elisha Gray, president, following the annual stockholder meeting.

"It is important and proper", Gray said, "that we identify the company with our products. The name 'Nineteen Hundred' has not been used as a trade name for a number of years, and 'Whirlpool' is more significant to the consuming public."

## JULIUS KLEIN ON TODAY'S RANGE COMPETITION

Julius Klein, vice president, Caloric Stove Corporation, gave the conventioners attending the Midwest Regional Gas Sales Conference, in Chicago, March 27-29, a sharply etched picture of the electric range competition today.

Although the unified advertising and promotional efforts of the entire gas industry succeeded in reversing the trend of sales of electric ranges in the last half of 1949, Klein pointed out that competition is increasing, with the electric industry again dominating national advertising pages and television advertising. →

More than 38,000 salesmen have been trained to sell electric ranges while the gas industry last year trained 2,150 men. The public doesn't know the gas range can do everything the competition can do and more, Klein said. The gas industry needs to demonstrate the modernity of the automatic gas range. Gas

ranges hold greater profit possibilities for dealers, lower inventory costs and the highest gross profit of all appliances sold by dealers. The industry must take stock of every phase of operation every day, Klein declared, if it is not going to be overcome by the competition of the electric range.

industry's only wholly automatic and continuous smelting units. The company also played host to the students at a luncheon.

## TWO NEW DIRECTORS FOR FERRO ENAMEL

At the thirtieth annual meeting of the Shareholders of the Ferro Enamel Corporation, held at the company's offices in Cleveland, Ohio, April 18, two new members were elected to serve on the Ferro board of directors. They are Allen Billingsley and Carl W. Johnson.

Billingsley is president of Fuller & Smith & Ross, Inc., marketing counsel and advertising agency, with offices in Cleveland, New York and Chicago.

Johnson is senior vice president of The Cleveland Graphite Bronze Company.

## OHIO STATE CERAMIC STUDENTS TOUR PEMCO PLANT AND LABORATORIES



Ohio State students pose in front of the Pemco Corporation plant.

Thirty-six senior students of the Department of Ceramic Engineering, Ohio State University, Columbus, Ohio visited the plant and laboratories of the Pemco Corporation, Baltimore, Maryland, recently, in conjunction with the school's annual senior class inspection tour to various ceramic companies throughout the country. The students, traveling by charter bus, were accompanied by Professor R. M. King.

At the Pemco Laboratories the students observed the latest equip-

ment and methods for ceramic research and development including the recently developed General Electric XR-D3 Diffraction X-Ray Unit for the determination of crystal behavior in ceramic materials. According to Dr. G. H. Spencer-Strong, vice president and director of research for the firm, this is the only instrument of its kind in the entire industry.

The laboratory visit was followed by a complete inspection tour of the company's plant, which includes the

Dr. R. Patrick, research ceramist, explains operation of two-meter spectrograph. At extreme left are Dr. Spencer-Strong and Professor King.



## ELECTRIC COMPANIES RECEIVE EDUCATIONAL AWARDS

The national George A. Hughes awards for 1949 were presented to six electric companies that conducted outstanding educational and promotional activities to advance electrical living last year. The presentation took place at the sixteenth annual sales conference of the Edison Electric Institute at the Edgewater Beach Hotel in Chicago.

Offered each year by Hotpoint, Inc., the awards are sponsored by the E. E. I. Prizes were presented to winners in five classifications of promotional activity: Class I, electric kitchen; Class II, domestic electric range; Class III, electric water heater; Class IV, electric dishwasher; Class V, commercial electric cooking.

Class I winners were Pennsylvania Power & Light Co., first prize, and Gulf States Utilities Co., second prize. The West Penn Power Co. and the Kentucky & West Virginia Power Co. were first and second prize winners, respectively, for domestic electric range activities. Class III prizes were won by West Penn Power Co. and The Detroit Edison Co. First prize winner in Class IV was Pennsylvania Power & Light Co. In Class V,

the Toledo Edison Co. took first prize, while second prize went to Pennsylvania Power & Light Co.

Originated in 1935 as a means of providing incentive and recognition for outstanding promotion of domestic electric ranges, the Hughes competition was expanded postwar to cover five major fields of electrical living.

### NEW PROCESS SOLVES MILLING CONTAMINATION PROBLEM

Orefraction, Inc., Pittsburgh, Pa., has announced the design and development of radically different equipment, and the completion of new quarters to house it, for processing rutile and zircon in particle sizes down to 400 mesh so that milling contamination is entirely eliminated.

According to the report, Orefraction equipment actually shatters the ores apart without changing their chemical composition and without picking up any "grinding" contamination. Not only are the resultant particles of zircon and rutile said to be pure, but also it is claimed that the angular and irregular "fractured" particles compact more densely and interlock more completely. Because of the physical binding of the particles with each other, there is less air space between the grains and reduced amounts of binders are possible in certain uses.

In a new building recently completed mechanical conveying equipment transports the ores to the top of the building where processing begins. Continuous and automatic processing continues through every step until the refined minerals are discharged, ready for packaging and shipping. Further, to assure pure and clean zircon and rutile, exclusive preparational and separational methods — plus exacting spectrographic and chemical controls — are part of Orefraction's standard procedure.

### BRIGGS TO DISPLAY ON PACIFIC COAST

It is reported that one of the most elaborate and colorful displays to be shown this year at the National Association of Master Plumbers Annual

finish MAY • 1950

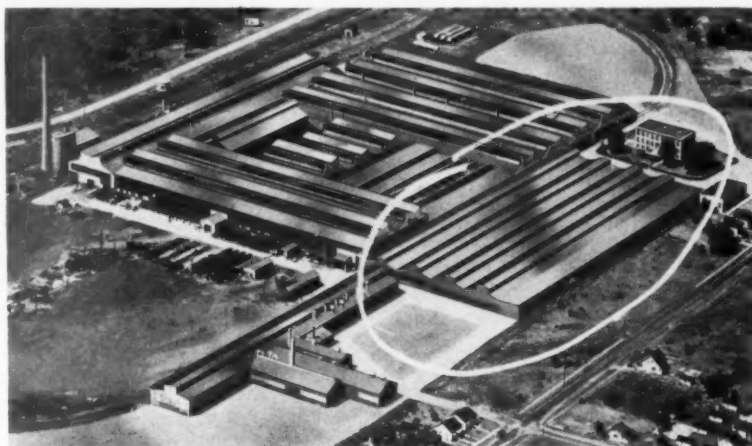
Convention & Exposition (held in connection with the 1950 Home Comfort Show) May 17 through 20, 1950, at the Civic Auditorium, San Francisco, California, will be the exhibit of the Plumbing Ware Division of the Briggs Manufacturing Company, Detroit.

To make the exhibit more effective,

Briggs are stressing their colored ware by showing only colored fixtures, although they manufacture their entire line in white as well as four decorator colors.

The display measures 30 feet by 20 feet by 8 feet high, and requires more than 6,000 watts of electricity for illumination and animation.

### MULLINS BUILDING WAREHOUSE ADDITION TO PLANT



A new warehouse with 147,000 square feet of space and costing \$700,000 is being constructed by Mullins Manufacturing Corporation at its Warren, Ohio, plant for storage of finished Youngstown Kitchen products.

In announcing the building project, George E. Whitlock, president, said that the warehouse will assure a more even flow of goods to the company's 64 national distributors and to its dealers, and will provide steadier work for employees. Finished products will be stored during periods of lower demand and will supplement factory production during periods of peak demand. Occupancy is expected by July 1.

The new warehouse attaches to the present plant building (see photo) and will be 264 feet wide and 560 feet long. It is the largest construction project undertaken by Mullins at the Warren plant since the original building was constructed in 1920. Other major construction projects there since the war include a new enamel furnace and a section of building to house it, and a new storage

addition to the main plant completed in 1949 at a cost of about \$375,000.

### STEEL PLUMBING WARE SHIPMENTS UP

Shipments of porcelain enameled steel plumbing fixtures amounted to \$11.7 million during the fourth quarter of 1949, according to the Porcelain Enamel Institute. With over 400,000 units, manufacturers of porcelain enameled steel fixtures accounted for 18% of the total plumbing units shipped.

Fourth quarter shipments were approximately 18,000 units and \$60,000 ahead of those of the third quarter. The bulk of the gain came from porcelain enameled steel kitchen sinks, with steel bathtubs and steel lavatories also registering increases.

### WHITING ACQUIRERS COBURN-FOSTER CONVEYORS

The Whiting Corporation, Harvey, Illinois, manufacturers of materials-handling equipment, announces that it has taken over the belt and chain conveyor business formerly operated



as the Coburn-Foster Conveyor Company, Chicago.

The chain and belt-conveyor product group will be headed by Gordon Foster, former president of Coburn-Foster.

Equipment will be manufactured at the Whiting plants at Harvey, Illinois, and Los Angeles, California. It will include belt conveyors — adaptable to both packaged goods and bulk materials. Also to be offered are chain conveyors, to be used both horizontally (as drags for moving material in units) and vertically (in the form of bucket elevators).

#### SELAS CHICAGO MANAGER

Anthony J. Potts has been appointed Chicago district manager of Selas Corporation of America, heat processing engineers, Frederic O. Hess, president, has announced.

Prior to joining the Selas staff, Potts represented George J. Meyer Manufacturing Company. Earlier, he was with the Brown Instrument division, Minneapolis-Honeywell Regulator Company.

#### UNION STEEL ENGINEER TO VISIT GREAT BRITAIN

Don W. Kelsey, materials handling engineer of the Union Steel Products



Company of Albion, Michigan, will fly to England in June to attend the British Materials Handling Show to be held in Manchester, England, June 6-17.

Kelsey will visit various English plants to compare British handling

methods with those in American factories. He will also study the cur-

ricula in materials handling offered in English universities.

#### INTRODUCE NEW APPLICATION TO DE-HUMIDIFY AIR



Kelvinator has introduced a compact electric air drier as a new addition to its major appliance line.

C. T. Lawson, vice president in charge of Kelvinator sales, said the new appliance is designed for household or commercial use, in closed areas where excess moisture may cause discomfort or property damage. He said it can remove as much as three gallons of excess moisture from the air every 24 hours from an area equivalent in size to a large home basement, in warm, humid weather conditions.

"Market surveys indicate that de-

mand for an efficient air drier, although strongest in coastal areas, river valleys and other notably humid areas, is widespread throughout the nation", Lawson said.

The Kelvinator air drier is made of steel, finished in gray enamel. It measures 12½ inches wide, 20⅞ inches high, and 21¾ inches long. In operation the fan draws humid air in through two sets of refrigeration-type coils at the top, moisture condenses and is collected in a 10-quart container. Refrigerating mechanism operates drier. It may be connected to any 115-volt AC electrical outlet.

#### NESA STATES POLICIES AND OBJECTIVES

In a recent re-statement of policies and objectives the officers of the National Electric Sign Association released the following statement:

In brief, the basic principles of NESA are "to build a strong organization of reputable electric sign companies that will work together to raise the standards of the industry, improve the quality of their products and ser-

vices to sign buyers, and promote the electric sign business generally".

The following program has been set up for this year in keeping with the primary aims of the association:

**Convention** — Conduct the annual convention.

**Educational** — Continue the Sign Manual and develop as much material as possible on these subjects: Accounting; Maintenance; Production; Sales; Standardization.

**Labor Relations** — Compile and



distribute to members information on wage rates and working conditions in the industry.

**Legislative and Code** — Support or approve major legislation affecting the industry. Promote the ASA and BOCA Recommended Codes for obtaining more uniformity in local sign ordinances.

**Promotional**—Conduct annual sign design contest. Promote greater use of electric signs through articles in trade journals. Develop business promotional material for members' use.

**General** — Publish news bulletin. Cooperate with other organizations with allied interests. Contact members as much as possible.

Committees are being appointed to carry on these activities.

### ENAMELED BEARINGS SOLVE INDUSTRIAL PROBLEMS

Porcelain enameled cast iron or steel bearings are helping to solve many industrial processing problems in applications where ordinary bearings cannot be used, reports the Porcelain Enamel Institute. In corrosive or inflammable fluids, where high temperatures are encountered, or where metal contacts may cause electrolysis, porcelain enamel-coated bearings may be safely used, the Institute says.

Porcelain enameled bearings are made to operate with a synthetic rubber journal which fits over the shaft and runs against the bearing surface. The bearings are self lubricating when operating submerged in almost any fluid, and they will not alter the taste, color, or odor of foods or chemical products with which they come in contact. The only limitation as far as operation in corrosive fluids is concerned is the rubber journal. The bearings themselves are highly resistant to acids (except hydrofluoric), to all organic solvents, and to cold alkali solutions.

The bearings can operate at temperatures well above the boiling point of water. Fire hazards are substantially eliminated because with the porcelain enamel coating and the rubber journal there is no metal contact. Electrolysis is entirely eliminated be-

cause both the bearings and the journals are non-conductors. The bearings may be operated up to 4500 revolutions per minute.

### SELLING SALESMEN

The Sales Executives' Club of Cleveland is doing something about the selling problem.

As a feature program the Club presented Arthur H. (Red) Motley, chairman of the board of directors of the National Sales Executives . . . president of Parade Publications . . . and "stem-winding" speaker on advertis-

ing and sales promotion — on the same platform with Jack Lacy . . . "the Salesman's Salesman" . . . sales training expert.

The result: An audience of 3000 salesmen and business executives at Cleveland's Music Hall — and others turned away at the door.

There is interest among salesmen if they are offered some "meat".

One of the prime movers in the double barrelled presentation was Glenn Hutt, assistant to president, Ferro Enamel Corporation.

### PERFECTION STOVE INTRODUCES FIRST "CP" MODELS



Its first "CP" gas range models are currently being introduced by Perfection Stove Company, Cleveland, Ohio. The newcomers to the Perfection Gas Range line are the Models 955 and 956.

The fully-automatic 956 is equipped with an automatic clock which turns the oven and convenience outlet on and off when the clock is set. The 955 is equipped with electric clock and minute timer.

Both models feature Perfection's exclusive "No-Turn" Broiler, which broils food on both sides at the same time, light-weight stainless steel surface burners, each with simmer con-

trol for "waterless" cooking, and a gleaming white porcelain enamel oven lining. The cooking tops are of the one-piece turret type. Burners have been engineered for use with natural, manufactured, bottled or butane air gas.

### SHAKEPROOF APPOINTMENT

The appointment of Russell W. Bill as eastern sales manager, to head the new Eastern Sales Office of Shakeproof Inc. division of Illinois Tool Works, was announced by Harold Byron Smith, president of the parent company. →

Mr. Bill will direct the activities of Shakeproof's sales staff covering the

territory from Pittsburgh to the Atlantic coast.

## GRADUATE CHICAGO CLASS OF WIREBOUND ENGINEERS



Fifty-seven members of the wire-bound shipping container industry received certificates as "Graduate Engineers of Wirebound Design" at a special dinner held March 30, in Chicago, at the LaSalle Hotel.

Photo shows T. I. Foster, left, receiving congratulations and a certificate from R. F. Miles, center, of Rathborne, Hair and Ridgway Box Co., and Neil A. Fowler, of General Box Company, who were co-chairmen of the Chicago ceremony, the sixth of a series of seven being held throughout the country (*story in April finish*).

F. A. Stuart, of Chicago Mill and Lumber Co., said that the Wirebound Institute, inaugurated three years ago under the auspices of the Wirebound Box Manufacturers Association, has "brought the industry much closer together."

## REVEAL NEW FUEL FOR TORCHES, APPLIANCES

A self-pressurizing fuel for flame tools and small appliances, packaged in a seamless throwaway container much the same in size as an ordinary beer can, has been perfected and is now being introduced by Pressure

Products Corporation of Chicago.

The new fuel is called "Prepo" by its inventor, Louis A. Falligant, presi-

dent of the company. In announcing the new fuel Falligant also announced the first of a series of tools and appliances that are being designed to be used with the new fuel. The first tool is the "Prepo" hand torch, which lights instantly, without pouring, pumping or priming, and burns with a clean, blue flame of more than 2200 degrees.

## WAR BONDS TO LIFT CONSUMER SPENDING

*\$1 Billion Worth of War Bonds Mature* this year, and there'll be a continued lift in consumer spending power for at least the next ten years, for \$1.6 billion more will mature in 1951, \$4 billion in 1952, and so on until at least 1960, the Treasury Department says.

Refrigerators and Freezers continue to be "hot" items on the home furnishings merchandising front. They will account for a nice slice of the multi-billion dollar home furnishings volume this year.

## NEW LINE OF WATER HEATERS HAS TEMPERATURE DIAL



A new line of electric water heaters with a dial for selecting temperatures, a functional feature which for the first time permits retail salesmen to

demonstrate this appliance like a range or dishwasher, has been introduced by Hotpoint, Inc.

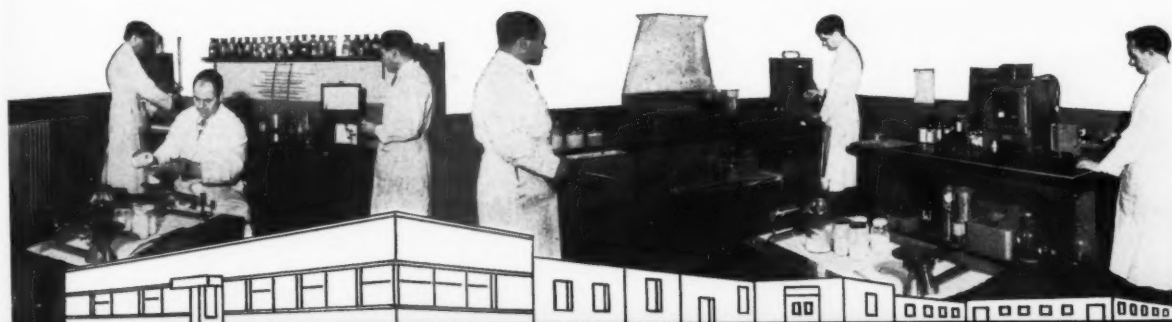
to Page 63 →

# Announcing . . .

*"fluid-film"* the all-purpose die lubricant for light or heavy stampings - the latest thing in semi-plastic emulsions, a non-pigmented compound with great film strength.

- Clean it
- Anneal it
- Weld through it
- Dilute it (within limits)
- Draw with it (wet or dry)
- Brush it - dip it - roll it - spray it

*"fluid-film"* is low priced, easy to apply and easier to clean, making it a real buy in the die lubricant field. We're sure this is what you have been looking for.



**NORTHWEST CHEMICAL CO.**  
9310 ROSELAWN      DETROIT 4, MICH.



pioneers in pH cleaning control — serving you since

'32

## Safe Transit Letters

### tangible move against damage

#### To Safe Transit Committee:

Thank you for your letter of March 8, and for the copies of the Test Procedure sheet I had requested. You may already know that Mr. L. A. Danse of the G. M. Production Engineering Section recently ordered a quantity of the Safe Transit Booklets,

and these will be sent to all packaging and materials handling men in the Corporation. . . .

Personally I am favorably impressed with your program because it seems to be a tangible move against freight damage, and because it is based on simple performance tests.

R. A. O'Reilly, Jr.  
Service Section  
General Motors Corporation  
Detroit, Michigan

### using the procedures

#### To NST educational division:

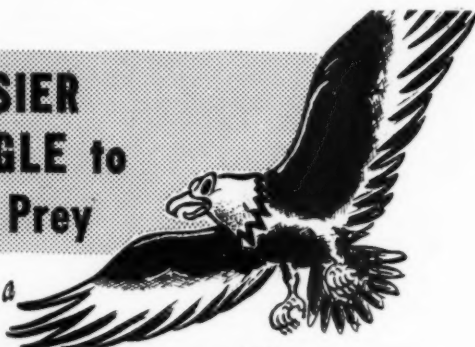
We have been using a vibration package tester at our Grand Rapids Plant for about eight months and at our Detroit Plant for four months. We have found this equipment very helpful in checking our current packaging and product, as well as new designs, for resistance to shipping damage.

We are using the procedures outlined in The National Safe Transit Program. . . . We are certain that we have prevented an appreciable amount of shipping damage due to our use of pre-shipment testing of our packaged products. . . .

L. C. Whitsit  
Quality Engineer  
Kelvinator Division  
Nash-Kelvinator Corp.  
Detroit, Michigan

**IT'S EASIER  
for an EAGLE to  
Miss its Prey**

*than for a*



## FRANTZ FERROFILTER

to miss removing IRON from your  
**ENAMEL FINISHES**

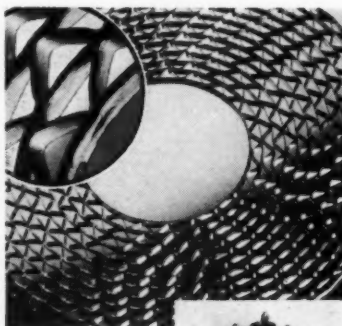
The eagle seldom misses its prey... but the FRANTZ FERROFILTER never misses... never fails to remove iron particles from your enamel slips. And under favorable conditions does its job even to a micron in size.

You Enamelers know how important it is to have your products present a glistening spot-free finish to pass inspection on the sales floor today. FRANTZ FERROFILTERS offer you the proven method of positive removal of iron, simply and economically.

If you have FRANTZ FERROFILTERS in your plant you know that they have lived up to all the claims we have made for them... that they have paid for themselves many times over in performance.

Why not check your millroom and other important production points to see where you can advantageously install extra units, so that you won't have to move your FERROFILTER from place to place. There's a size and model for every purpose.

**WET FERROFILTERS**  
Gravity-Pipeline-Underfeed  
**DRY FERROFILTERS**  
For dry process enamels and  
other ceramic materials



Above — The heart of this Electro-magnetic FERROFILTER is the patented grid illustrated, of which 16 to 30 units represent hundreds of feet of sharp, magnetized collecting edges.

Right — Gravity type FERROFILTER. Excellent for glaze, enamel, and general use. Light and portable. Made in four sizes.



**S. G. FRANTZ CO., INC.**  
161 Grand Street New York 13, N. Y.

Authorized Representatives for the Enameling Industry  
**FERRO ENAMEL CORPORATION**  
4150 East 56th Street  
Cleveland 5, Ohio

**CHICAGO VITREOUS ENAMEL  
PRODUCT CO.**  
1425 So. 55th Court Cicero 50, Ill.

### greater dealer goodwill in Canada

#### To NST educational division:

We have communicated with the Supervisor of our Packaging Service and he has advised us that our packaging tests were made in conjunction with the National Safe Transit Program.

Our Supervisor, Mr. Harold Bonner, reports that the National Safe Transit Program is appreciated by him for the following reasons:

1. It promotes better packaging of products.
2. Less transit damage.
3. Greater dealer goodwill.
4. Better all-round service.

W. J. R. Rogers,  
Director of Purchases  
Moffatts Limited  
Weston, Ontario, Canada

### "the scrunch of breaking stoves"

If you think you have shipping troubles read this letter from Aus-

MAY • 1950 finish



tralia (presented anonymously for obvious reasons)

#### To Safe Transit Committee:

Thank you very much for your letter of January 31st., which we think gives us all the information we need to initiate our own safe transit programme here.

A national programme is probably even more needed here than in the United States, as our transport conditions are so much worse than yours. On account of the railroads being government owned, restrictions are placed on the use of road transport, and in any case, the roads are so bad that major accidents are not uncommon. On the railroads, there are no less than 70 different types of cars in use for freight of various kinds, some of them upwards of 70 years old; automatic couplings are comparatively rare, and the train crews inexperienced, or just plain careless.

The sea transport situation is equally bad, as the loading and unloading is done by the Communist-dominated Waterside Workers' Union, who enjoy nothing so much as the scrunch of breaking stoves, unless perhaps it is pilfering nylon stockings.

It is no wonder, therefore, that we have been sending a considerable proportion of our washing machines and ranges by air freight.

You will realize, therefore, that in these circumstances, we have been following the reports of your programme, as published in "Finish" Magazine with very great interest, and we shall continue to do so.

Anon.



## "Beware of little expenses! A small leak will sink a great ship."

—Ben Franklin's Almanac, 1757

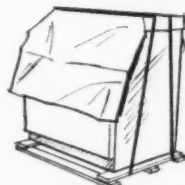
One penny dropped maketh not much noise but thousands of pennies dropped over the year maketh a big bang before ye annual stockholders' meeting.

—Acme Steel's Notebook, 1950

Dear Sir: Maybe you have had too much else on your mind to worry about how your company packages, ships, or bundles materials within your plant.

But in these days of rising costs, you can't afford to pass up the savings you may be able to make in this part of your business. Here at Acme Steel Company, we have shown more than 50,000 customers how to cut costs, save time, labor and materials with Acme flat steel strapping, Acme stitching machines and wire, and other Acme Steel products. In 9 out of 10 cases, Acme sales engineers are able to start you on the road to thrifty benefits.

Some specific examples of what we can do are shown here. It takes only a minute to read them—and not much longer to pick up your telephone and call the Acme Steel Company service office nearest you. (There are 46 of these offices in the principal cities of the U.S. and Canada.) Or mail the coupon today for more information and detailed case studies in your particular field.



Westinghouse  
saves 30 cents per unit!

Acme Steeltrap Method and a skid base eliminate interior blocking, reduce amount of padding on Westinghouse Laundromats.



Acme Floating Load Method  
saves up to 50%

Newark Stove Company, Newark, Ohio, braces carload shipments with Acme Unit-Load Bands, for big savings in damage claims.

# ACME STEEL

Of the 3759 Acme Steel employees, 318, or 8.5%, have worked with Acme for more than 25 years each and are members of our Quarter Century Club. Their total service represents 8618 years—tribute to "A Good Place to Work."

ACME STEEL CO.  
CHICAGO

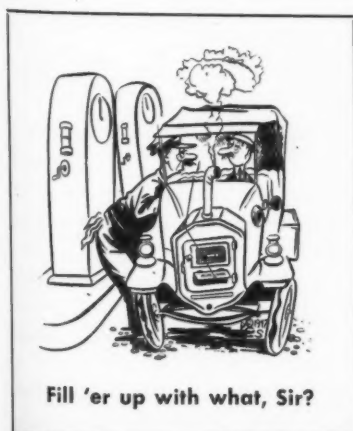
#### ATTACH THIS COUPON TO YOUR BUSINESS LETTERHEAD

ACME STEEL COMPANY, Dept. FI-50, 2338 Archer Avenue, Chicago 8, Illinois

We manufacture \_\_\_\_\_ Please send me booklets on Acme Methods checked.

- ☐ Please have sales engineer call.
- ☐ **Shipping (Carload and L.C.L.)**—"Acme Unit-Load"—The story of reduced damage claims and better handling for shippers.
- ☐ **Packaging, Shipping, Materials Handling**—"Savings in Shipping" tells how to save money and safeguard customer good will with Acme Steeltrap.
- ☐ **Product Assembly**—"Acme-Morrison Metal Stitches"—for savings in fastening metal-to-metal or metal-to-other materials.
- ☐ **Bag and Box Assembly**—"Profit by Stitching" demonstrates cost-cutting Acme Silverstitchers and Acme-Champion Stitches.
- ☐ **Book Assembly**—"Acme-Morrison Book Stitches" for savings in the graphic arts field.

NAME \_\_\_\_\_ POSITION \_\_\_\_\_  
COMPANY \_\_\_\_\_  
STREET \_\_\_\_\_  
CITY \_\_\_\_\_ ZONE \_\_\_\_\_ STATE \_\_\_\_\_



Fill 'er up with what, Sir?

## New Equipment

→ from Page 51

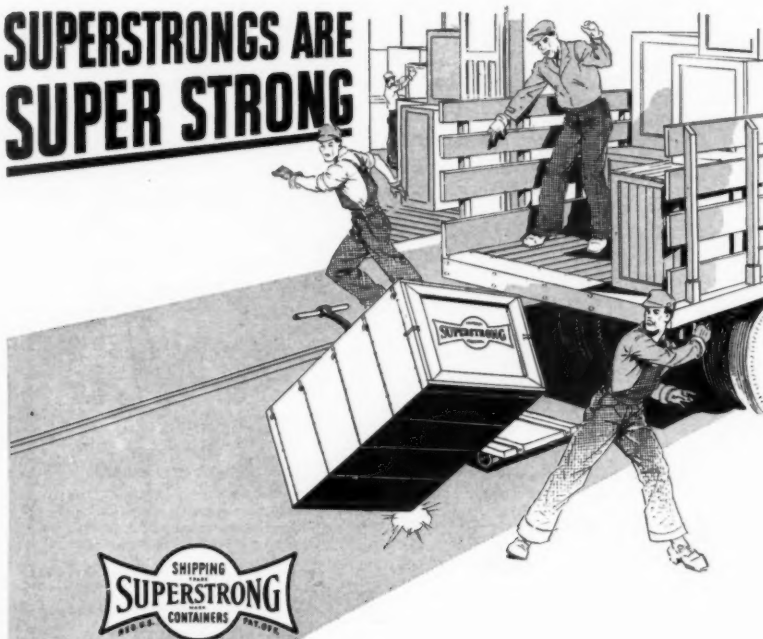
is said to increase the service life of equipment from 2 to 10 times over materials previously used for applications such as pickling tanks, fume ducts, exhaust fan blades, pipe lines, acid circulating systems, etc. The material, Stainless No. 20, is available in the forms of bar stock, wire, strip, tubing, pipe, sheet and plate.

A number of firms are producing products such as valves, fittings, fas-

tenings, wire cloth and weld rod from the stainless material. These additional products made from No. 20 make possible the construction of units with full corrosion resistance throughout all component parts.

Life expectancy for this pickling tank (in photo) handling 3% to 5% sulphuric acid at 160°-170° F. is 25 years. When made from materials other than "No. 20" stainless, tanks lasted only 4 years and required excessive maintenance.

## SUPERSTRONGS ARE SUPER STRONG



WIREBOUND BOXES and CRATES  
WOODEN BOXES and CRATES  
CORRUGATED FIBRE BOXES  
BEVERAGE CASES  
STARCH TRAYS  
PALLETS

Nearly a century of experience has resulted in the design and construction of shipping containers which give maximum strength and protection.

**SUPERSTRONG** boxes and crates - wirebound, wooden and corrugated - incorporate special features which provide increased efficiency and protection at a reduced overall cost.

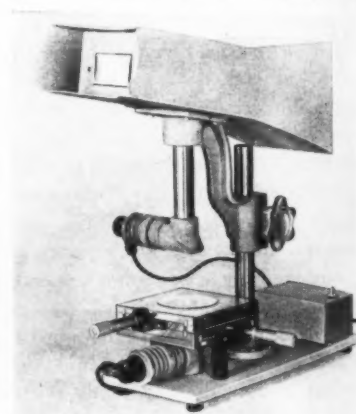
Your product will receive individual attention, so that a **SUPERSTRONG** container may be custom built to its particular specifications. A **SUPERSTRONG** representative will call when you request to make a thorough analysis of your shipping requirements.

**RATHBORNE, HAIR AND RIDGWAY BOX CO.**  
1440 WEST 21st PLACE • CHICAGO 8, ILLINOIS

## E-12. Scratch tester for organic coatings

A new shear hardness and diamond scratch tester for organic finishes and plastics is being offered. It is designed to test resistance to scratches, digs, scrapes and similar physical damage not classed as normal wear. It is said to accurately measure the surface toughness and scratch resistance of any plastic or coated surface.

## E-13. New "all-purpose" projector



This new optical projector unit is primarily a measuring instrument capable of readings in increments of ten-thousandths (.0001") of an inch in two planes at 90° but in addition provides both Contour and/or Front-Surface Projection of the subject being measured.

The projector is available in standard magnifications of 10X, 20X, 30X, 45X, and 60X, as well as any special magnification up to 120. The screen is six (6") inches square. A small and portable instrument designed for use wherever projection means can be considered.

## E-14. New Zircon product

To meet the growing need in the ceramic and metallurgical industries, announcement has been made of the availability of an "intermediate" sized zircon product having high purity and uniformity. It is said to permit faster solution in enamel frits and glasses, close shrinkage control in zircon porcelain and refractory bodies, and finer grained foundry facings.

## NEWS → from Page 58

The user can set the temperature by turning the dial to the position that meets the present hot water requirements in his home, merely resetting the dial when future additions of automatic equipment like a dishwasher expand his hot water needs. These adjustments formerly were jobs for the serviceman.

Replicas of the "Magic Dial" will be available for salesmen to use as a dramatic sales aid for home demonstrations of how the appliance operates.

There are three colored settings on the new dial control: blue, marked "Vacation"; yellow, marked "Average"; and red, designated "Extra Hot." This departure from postwar design was developed by Hotpoint following marketing studies of typical installations throughout the country. These showed that many users wanted to make temperature adjustments at various times.

Preferences for water temperature are different. In California 130 degrees is considered adequate, whereas people want 160-170 degrees in rural New York and Pennsylvania. Also temperature requirements vary with the length of pipes between the water heater and point of use, house size, number in the family, presence of guests and the season.

Hotpoint water heaters with "Magic Dials" are made in 30, 40, 52, 66, and 82 gallon cylindrical models, and in 30 and 40 gallon table-top sizes that match other counter-high appliances in the modern kitchen. A 52 gallon square model is being introduced to meet the demand for larger capacity in houses which do not have basements.

One of the biggest problems for domestic home laundry equipment manufacturers is to help the housewife clarify, in her own mind, the problem presented by the wide variety of soaps and detergents now being offered with their claims and counter-claims. It's all very "confuzin'".

Finest fabrics and hand-made garments can be washed safely in a wash-

ing machine. Put two or three garments in a pillow slip, baste the opening closed, and wash them in warm

water.—San Bernardino (California) Telegram.

## PEI SETS DATES FOR SHOP PRACTICES FORUM, SALES MANAGEMENT CONFERENCE, AND ANNUAL MEETING

Starting with the 12th annual Shop Practices Forum, to be held at the University of Illinois, Urbana, Ill., on September 13, 14 and 15, three important Porcelain Enamel Institute

events are scheduled for this fall.

The three-day Forum, like the previous Forums, will be devoted to the promotion of greater efficiency in porcelain enameling processing tech-

## Let "By" and "Kay" help you sell!

"By" and "Kay" Factor  
are ready to go to work for you!



↑  
"By's" base  
has a special  
adhesive that  
sticks to any  
dry surface.



↑  
"Kay's" base  
has a special  
adhesive that  
sticks to any  
dry surface.

These 5-inch sales-minded characters are telling 33,000,000 readers of **LIFE** and **BETTER HOMES AND GARDENS** what both men and women should look for in buying ranges.

Now, "By" and "Kay" are ready to stick to the sides or tops of ranges on sales floors—to remind buyers how to buy, and sellers how to sell—with Fiberglas\* Insulation.

Get your supply of these sales aids from your range supplier.

OWENS-CORNING  
FIBERGLAS CORPORATION  
Dept. 109-E, Toledo 1, Ohio

OWENS-CORNING  
**FIBERGLAS**  
Appliance Insulation

\*FIBERGLAS is the trademark (Reg. U. S. Pat. Off.) of Owens-Corning Fiberglas Corporation for a variety of products made of or with glass fibers.

FIBERGLAS IS IN YOUR LIFE...FOR GOOD!



niques. An outstanding program has been arranged covering a variety of phases connected with plant operation and the industry.

The 4th annual Sales Management Conference, to be held at Hotel Cleveland, Cleveland, Ohio, October 4 and 5, will feature leading sales and management executives. Meetings of the Architectural, Sign, General Enameling, Table Top, Cooperative, and Steel Plumbing Fixtures Division of the Institute have also been arranged

for this time. The executives and sales representatives of each member company will meet to lay plans for the 1951 Market Development Program for the respective Divisions, and will consider other Division matters.

The 19th annual meeting of the Institute has been scheduled for November 1 and 2, at the Greenbrier Hotel, White Sulphur Springs, West Virginia. Most important subject on the program will be the reviewing of the year's accomplishments and lay-

ing plans for continued progress of the porcelain enameling industry.

The Coordinating Committee for the District Enamellers Clubs, which usually meets during the Forum, scheduled a meeting for Tuesday noon, April 25, during the American Ceramic Society's annual meeting in New York City.

#### Maypole Party, May 19

Midwest enamellers are reminded that their annual Maypole Party will be held May 19, at the Sportsman Golf Club, Chicago.

Capital Expenditures for New Plant and Equipment in Current Quarter are estimated at \$3.82 billion.

If the husband were put to work doing the family ironing with a hand-iron, sales of mechanical ironers would skyrocket.

#### UDYLITE NAMED DISTRIBUTOR FOR ROTARY TANK TOOLS

Appointment of Udyllite Corporation, Detroit, as national distributor for rotary tank "Magnetools" has been announced by Multifinish Manufacturing Company, Detroit, Mich.

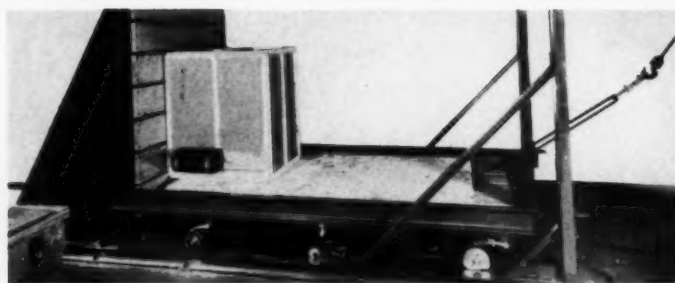
#### GAMA TO TOP ALL PREVIOUS EXHIBITS

The Gas Appliance Manufacturers Association will sponsor an Exposition of gas appliances and equipment in connection with the 32nd Annual Convention of the American Gas Association to be held in Atlantic City, New Jersey, October 2-6, 1950. The A.G.A. Convention Committee is headed by Mr. George E. Whitwell, vice president, Philadelphia Electric Company.

According to G.A.M.A. officials, this year's exposition promises to top all previous endeavors. Amount of

MAY • 1950 finish

### FOR YOUR PROTECTION... HAVE YOUR PACKAGING TESTED BY AN OUTSTANDING CERTIFIED LABORATORY



The United States Testing Company, Inc., one of America's great scientific laboratories, has been certified by the National Safe Transit Committee. Extensive facilities and large staffs of trained technicians are at your service in a two-fold program of protection: (1) Testing of packaging under the Committee's Projects 1 and 1A; (2) Development work with package designers and packaging engineers toward improvements based on test results.

Typical of the Testing Company's leadership in testing equipment and methods is its new combination vibration and impact tester illustrated here... the first machine of its type on the market, the most modern and efficient combination machine ever designed.

A letter or phone call will bring you complete information on our packaging testing service, how it provides vital protection to you, and how it solves your packaging problems. No obligation, of course.



### UNITED STATES TESTING COMPANY, INC.

Established 1880

HOBOKEN, NEW JERSEY

PHILADELPHIA • BOSTON • WOONSOCKET • CHICAGO  
NEW YORK • LOS ANGELES • DENVER • MEMPHIS

Member of American Council of Commercial Laboratories



space contracted for has already set a new record.

Convention meetings will be so arranged that all in attendance will have ample time to see and study the latest in gas appliances and equipment, which will be found on display from Monday morning, October 2, to Friday afternoon, October 6. This Exposition is expected to attract many in addition to A.G.A. members.

### WHIRLPOOL NAMES KNOTT REGIONAL SALES MANAGER

Appointment of John F. Knott, Jr., as Whirlpool regional sales man-



ager for the Northeast territory was announced by R. M. Mitchell, general sales manager.

Before joining Whirlpool, Knott was sales supervisor in the home laundry department of Norge in Detroit.

### GLIDDEN APPOINTMENT FOR WEST COAST

Appointment of L. S. Fulton as manager of the Glidden Company's West Coast Paint Division, succeeding Z. G. Peck, who has retired after 30 years of service with the company, was announced by A. D. Duncan, vice president in charge of the Paint and Varnish Division.

Fulton formerly served as director of regional distribution in Glidden's Cleveland headquarters. He joined the company in 1920 and subsequently served as auditor of retail stores,

assistant to the president and regional director of the St. Louis division.

### DIAMOND ALKALI PRESIDENT PREDICTS STABLE DEMAND

Diamond Alkali Company, Cleveland, Ohio, reports net earnings of \$3,042,298 on sales of \$48,430,652 in 1949, according to the company's annual report.

Commenting upon the current outlook, Raymond F. Evans, president

of the company, states in the report:

"The principal industries which we serve now appear to have completed their postwar adjustment which should make for greater stability of demand. Customers' inventories are at moderate levels which should eliminate a repetition of the abrupt cessation of buying which occurred at this time a year ago. . . . While the demand for our basic alkali products is not nearly up to the high level of 1948, it is definitely better

## IN 6 SHORT WEEKS "KNOW-HOW" PAID OFF

THIS JENSEN ECONOMY ENGINEERED  
COORDINATED FINISHING SYSTEM



*Saved*

**10%  
ON LABOR**

**18%  
ON MATERIAL**

**50%  
ON BAKING TIME**

The above figures SHOW HOW Jensen "KNOW HOW" solved a problem and is saving money in finishing steel folding chairs for Acme Chair Company, Reading, Michigan.

Jensen finishing systems utilizing infrared radiant heating, with or without coordinated conveying, are engineered for economy—designed to increase production and minimize rejects; produce a uniform, finer, tougher finish in less time using less floor space.

Whatever YOUR product . . . whatever

YOUR equipment . . . whatever YOUR finishing problems may be, a Jensen Finishing System to replace or complement your present heating equipment—offers you many money-saving advantages.

ABSOLUTELY WITHOUT COST  
OR OBLIGATION TO YOU

We will conduct laboratory tests on your products, using your finishes. Parts will be returned promptly for your inspection, together with recommendations to meet your production requirements. You get practical PROOF of every possible cost saving.

**Jensen****SPECIALTIES INCORPORATED**

• Representatives in Principal Cities  
9331 FREELAND AVENUE • DETROIT 28, MICHIGAN

MANUFACTURERS OF ECONOMY-ENGINEERED RADIANT HEAT EQUIPMENT  
"DUAL HEAT" INFRARED OVENS • CONVEYORS • PAINT DIP TANKS

than it was at this time in 1949. Most of the heavy expense of breaking in new plants is now behind us. For these reasons we enter 1950 with improved prospects."

### FEBRUARY WASHER-DRYER SALES TOP LAST YEAR

Factory sales of standard-size household washers in February were higher, with one exception, than in any month since October, 1948, accord-

ing to the American Home Laundry Manufacturers' Association.

The February total was 342,967 units, an increase of 24.4 percent over 275,576 in January, 1950, and up 70.3 percent from 201,300 in February, 1949.

Dryers totaled 19,389 in February, compared to 19,495 in January, and were up 106.1 percent over 9,407 in February, 1949.

Factory sales of ironers in February totaled 27,600 units, compared

to 20,300 in January, an increase of 36 percent, and off 2.3 percent from 28,250 in February, 1949.

### REMA PUBLISHING "KOLDFAX"

A summary of news items of interest to its members is contained in *Koldfax*, a new monthly publication of the Refrigeration Equipment Manufacturers Association.

### EXECUTIVE VICE PRESIDENT OF BRUNING BROTHERS

Bruning Brothers, Inc., Baltimore, Maryland, manufacturers of paints



and varnishes, announces the election of Walter A. Gorrell as director and executive vice president of the company.

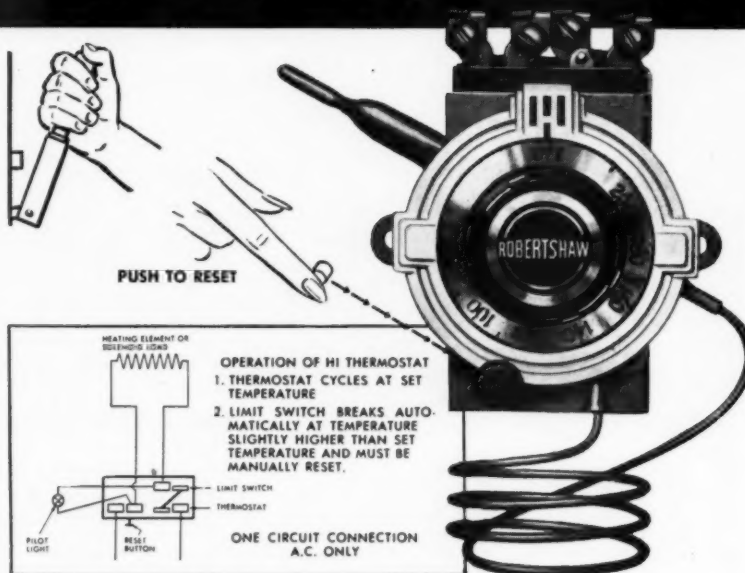
Gorrell has a long service record with Sherwin Williams Company of Cleveland, Ohio, which led him to the top post of John Lucas & Company, Inc., national paint manufacturers, as vice president and general manager, in Philadelphia. During this tenure he served as president of the Philadelphia Paint, Varnish and Lacquer Association. Gorrell later became president of E. J. McAleer & Company, Philadelphia, and served as a trustee and national president of the Pressed Metal Institute, in addition to being chairman of the Philadelphia Chapter.

### CARBORUNDUM '49 SALES DOWN — INCOME UP

The net sales of The Carborundum Company in 1949 were \$38,714,831.

MAY • 1950 finish

## Robertshaw COMBINATION THERMOSTAT AND OVER TEMPERATURE CUT-OUT



Combines temperature control with single pole switch. Current is automatically cut off and switch is locked in open position if temperature at any dial setting, through any cause, exceeds temperature range of control by 7% in liquids or 12% in air. Switch remains open until closed by manual reset button. Design permits mounting control in any one of four positions. Standard size bulbs and capillary tube lengths give great flexibility to meet required heat ranges and installation needs.

Write for full information.

In home and industry, EVERYTHING'S UNDER CONTROL



# Robertshaw

THERMOSTAT DIVISION  
ROBERTSHAW-FULTON CONTROLS COMPANY

YOUNGWOOD, PENNSYLVANIA

or 10.9% less than 1948, according to a statement by H. K. Clark, president of the Company, in the Annual Report to stockholders.

Net income of the Company for 1949 was \$1,475,038, or \$2.90 per share, as compared with \$1,046,922 or \$2.06 per share in 1948, according to the report. Dividends paid amounted to \$127,316 as compared with \$1,018,530 in 1948.

### NEW LOCKE ASS'T MANAGER OF ENGINEERING

Howard A. Frey has been appointed assistant manager, Engineering



Department, according to an announcement made by R. G. Bellezza, President of Locke, Incorporated, Baltimore, Maryland. Under the direction of W. Scott Hill, vice president, Engineering, Mr. Frey will have responsibility for all engineering matters.

### CRIBBEN & SEXTON EXPANDING SALES FORCE

Harold E. Jalass, vice president and general sales manager of Cribben and Sexton Company, has announced the expansion of the Universal gas range sales force.

Four new men, under the supervision of Fred F. Lauer, eastern sales manager, have joined the company to provide service for utility and dealer customers in that area. Robert Blackwell, formerly of the Taunton Gas Light Company, augments the New

England staff; John Pierce is added to the New Jersey force; M. E. (Buddy) Bray and John Phelan will represent Universal gas ranges in Maryland, Virginia, and Washington, D.C.

D. H. (Pete) Jackson has joined the dealer sales force in the Green Bay district, under the supervision of J. G. Schellenberg, central division manager; George E. Pitts has joined the firm to serve in the Chicago sales division under the guidance of Frank

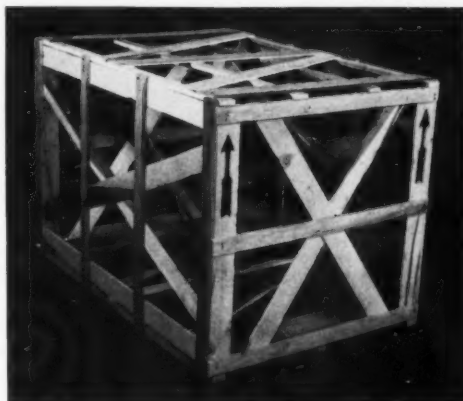
H. Goetz, manager; and an office has been opened in Park Square, Boston, to provide better service to customers in the New England area, according to the announcement.

### CENTRAL DISTRICT ENAMELERS ELECT NEW OFFICERS

The March Meeting of the Central District Enamelers Club was held Friday, March 24, 1950 at the

## TIGHT CORNERS *with* B-G HINGED CRATES

The bracing strength and rigidity of the Bigelow-Garvey exclusive tight-corner design makes it possible for our Hinged Crates to withstand shocks, stresses and abuse that would be disastrous to ordinary collapsible crates.



A typical Bigelow-Garvey Tight Corner Hinged Crate designed for shipping a porcelain enameled range.

B-G Hinged Crates are designed for quick assembly, with completely collapsible mat and pre-drilled nail holes. Three-way corner construction produces an unusually rigid and strong crate. Corners are held securely by 14 gauge wires.

Over 27 years experience — designing and manufacturing crates for shipping appliances and other products for the home — stoves, washers, ironers, home freezers, refrigerators, bathtubs, sinks, and other appliances.

OUR CRATES ARE BUILT TO PASS THE TESTS OF THE NATIONAL SAFE TRANSIT COMMITTEE

Bring your shipping problems to us.

## BIGELOW-GARVEY LUMBER CO.

General Office and Laboratory

320 West Huron Street • Chicago 10, Ill.

Mills: Arkansas • Georgia • Wisconsin • Minnesota • Washington



Allerton Hotel in Cleveland, with President Paul Cecil presiding.

The following officers were elected for the year 1950-51: President, Norman Stolte, Enamel Products Co., Cleveland, Ohio; 1st Vice President and Program Chairman, Jack Swartz, Westinghouse Electric Corp., Mansfield, Ohio; 2nd Vice President, Richard Hammell, Tappan Stove Co., Mansfield, Ohio; Secretary and Treasurer, Mike Bozsos, Ferro Enamel Corporation, Cleveland 5, Ohio.

## ANNUAL HOME SERVICE AWARD

The American Gas Association Home Service Achievement Award, sponsored by *McCall's Magazine*, has been announced for the ninth year. Five equal awards totaling \$1,000 will be presented to home service departments or individual members of home service departments of gas utility companies which are members of A.G.A. Awards of two hundred dollars each will be given to companies or individuals, within several

divisions, who by ideas or achievements make the greatest contribution to the advancement of modern home-making by promoting interest in, and better use of, gas and modern gas equipment in the home.

## CHICAGO VIT UPS MCLAUGHLIN

John L. McLaughlin has been promoted to assistant manager of service, according to an announcement by A. S. Ault, manager of sales and service, Chicago Vitreous Enamel Product Co.

McLaughlin joined Chicago Vit in June, 1937, following his graduation from North Carolina State College. He spent several years in the research laboratory, and then went to Baltimore Enamel Novelty Company from June to November of 1940. Following military service, he rejoined Chicago Vit in October, 1945, as a member of the research division. In 1947 he was transferred to the service staff.

## AMERICAN CLADMETALS ELECTS TWO DIRECTORS

Capt. Alfred F. Olivet, USNR, and John P. Ahrens have been elected directors of American Cladmetals Company, Carnegie, Pa., it has been announced by Joseph Kinney, Jr., president.

John Ahrens is a former Mark Cross executive and a former president of Ahrens Realty Co., of Brooklyn, N. Y. Captain Olivet spent a number of years as an educator and in administrative capacities in maritime service.

American Cladmetals is said to have the only plant in this country devoted exclusively to the production of cladmetals. By the Kinney process, which it owns, metals are bonded permanently together to obtain in one product the best qualities of the metals employed. Production concentration has been made on Rosslyn metal which has a copper core sandwiched between stainless steel surfaces.

## STEEL CASTING GROUP MEETING

How intensive research and product development undertakings of Steel Founders Society of America are

to Page 80 →

**NOW** AN EXCLUSIVE, NEW PROCESS BRINGS YOU

GRANULAR TO 400 MESH PARTICLE SIZE

# Orefraction Zircons

THAT ARE SUPERIOR TO ORDINARY BALL-MILLED ZIRCONS

"FRACTURED" ZIRCON



(Magnified)

BALL-MILLED ZIRCON



(Magnified)

You can now get Zircons in particle sizes down to 400 mesh and finer, that are entirely free of milling contamination. Orefraction's new and exclusive method of "fracturing" ores actually blasts the Zircon apart, without changing its chemical composition. Resultant particles are not only pure, but the angular grains compact more densely than the rounder grains which are obtained by conventional ball-milling.

### CHECK THESE POINTS OF SUPERIORITY

- ✓ GREATER THERMAL SHOCK RESISTANCE AND HIGHER ELECTRICAL VALUES because "fractured" Zircon is free-silica free and has highest purity.
- ✓ GREATER TAP-DENSITY when used as dry electrical insulation because of "sizing" and angular particle shape.
- ✓ GREATER MECHANICAL STRENGTH IN CERAMIC BODIES because the angular particles of "fractured" Zircon interlock and compact more densely.
- ✓ HIGHER THERMAL CONDUCTIVITY because the fractured grains form a denser body with less air or binder space between particles.

PROVE OREFRACTION ZIRCON SUPERIORITY. Test Orefraction Zircons under actual working conditions in your plant. Write today on your letterhead for working samples.

OREFRACTION RUTILES high  $TiO_2$ , lower iron content. For ceramic colorants, acid resisting enamels, electrode coatings.

PROMPT DELIVERY ON ALL QUANTITIES



# Orefraction Inc.

7424 THOMAS STREET • PITTSBURGH 8, PA.



## EEL holds sixteenth annual sales conference

(Continued from Page 34)

long pants": (1) increased attention of home economists, home planners, magazine editors, and the public in general to the home laundry; (2) the wave of popularity of the automatic washer; and (3) the importance of the appliance to the housewife in that she can dry her clothes at any time of the day or night.

### Demonstrations build sales

Mr. Bolin pointed out that "you sell dryers, just like you sell washers — by demonstrations. Demonstrations built the washing machine industry — demonstrations in the store and demonstrations in the home." The speaker then mentioned a "Use-the-User" plan which a utility in the East is planning to employ in the promotion of dryers. In this plan, small home parties are held in the home of a new user. A prize of \$5 is paid to the user for each sale resulting from her efforts.

"The most productive of all demonstrations is a demonstration right in the prospect's home where she uses the dryer herself for a few days on a free trial basis. This is a sure-fire way of making sales," concluded Bolin.

### Hughes electric promotion awards

The Pennsylvania Power and Light Company, Allentown, received first prize in the George A. Hughes Awards for outstanding achievement in the promotion of all-electric kitchens during 1949, and also first prize for their work in electric dishwasher promotion.

The West Penn Power Company, Pittsburgh, won first prize for electric range promotion during the past year, and also first prize for electric water heater promotion.

The Toledo Edison Company, Toledo, received first prize for their work in the promotion of commercial electric cooking.

### McCall home service awards

Miss Edna A. Stephany, home service director of Pennsylvania Power and Light Company, received the Laura McCall Home Service Award in Division A (for companies with

more than three persons in home service activity).

In Division B (for companies with not more than three home service personnel), Miss Virginia Pierson, home service director, Pennsylvania Power Company, New Castle, received the award.

In Division C, three awards for members of home service departments

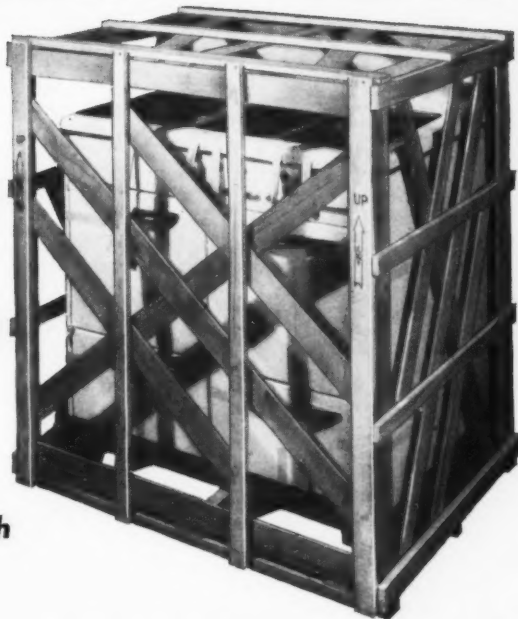
whose ideas best contributed to the advancement of homemaking through the use of electrical household appliances, the McCall Awards went to: Miss Muriel H. Kodis, Arizona Edison Company, Phoenix; Miss Margaret Buchan, Indiana & Michigan Electric Company, Fort Wayne; and Miss Marjorie Hume, San Diego Gas & Electric Company.

Both the McCall and Hughes award presentations were made by George E. Whitwell, chairman of the EEL Prize Awards Committee.

## WEYERHAEUSER CRATES

**OPEN  
FOR  
INSPECTION**

**... Yet 65%  
More  
Bracing Strength**



● This is an open crate . . . designed for full visibility and inspection for damage . . . without the need or expense of uncrating.

This crate is 65% stronger than ordinary strut crates. Diagonal bracing, the strongest type of bracing, is employed. The bracing is positioned not only for rigidity and strength, but to give adequate coverage and protection.

Weyerhaeuser crates are delivered in sectional form, ready for assembly. By nailing crates at the corners,

secure joining with maximum strength and rigidity is obtained. Drilling for nails is eliminated since the crate members requiring nailing are soft hardwoods which receive nails easily without splitting. You save money in assembly.

Crates are furnished in one-man bundles or may be strapped in larger bundles for palletized handling.

Weyerhaeuser offers a dependable crate engineering service and source of supply, backed by 18 years of experience. Inquiries are invited.

## WEYERHAEUSER SALES CO.

INDUSTRIAL WOOD PARTS DEPARTMENT  
Room 2134 • 400 West Madison, Chicago, Illinois



# Westinghouse

in porcelain enameling

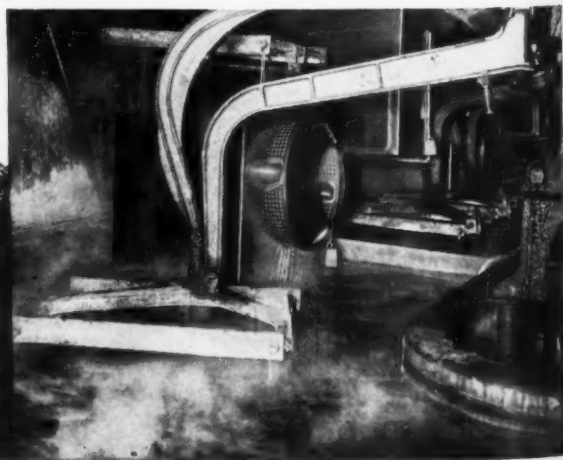
gets fewer rejects

higher uninterrupted production

lower cleaning costs

**Pennsalt Metal Cleaners**

*Liners and Laundromat parts emerge  
from Pennsalt Cleaner solution.*



It's a tough assignment for a metal cleaner to thoroughly clean mill oils, drawing compound and other soils from steel stampings and other steel parts prior to enameling. Especially since all parts must be 100% chemically clean. That's why the Westinghouse Mansfield, Ohio plant has used Pennsalt Cleaners for over 10 years. These quality metal cleaning compounds have proved most successful . . . a minimum of rejects and at lower cost!

In the Westinghouse multi-step cleaning process prior to enameling, Pennsalt\* 45X and Pennsalt\* 34 metal cleaners have done such a fast, efficient job that around-the-clock production is possible . . . with production uninterrupted by shutdowns for re-charging or rejects.


Satisfactory cleaning like this is being enjoyed all over the country by plants using Pennsalt Cleaners. Call in your Pennsalt representative. He'll be glad to discuss with you savings of time and money with Pennsalt's complete line of metal cleaners. Special Chemicals Division, Pennsylvania Salt Manufacturing Company, Philadelphia 7, Pa.

\*Reg. U. S. Pat. Off.

***Progressive Chemistry for a Century***

*Cleaned parts now ready  
for porcelain enameling.*



**PENN  SALT**  
*chemical cleaning  
compounds*

## Companies cooperating in Safe Transit program

**T**HE following companies are certified under the National Safe Transit Program. They are privileged to use the N.S.T. Label.

American Stove Company  
Cleveland, Ohio

American Stove Company  
St. Louis, Missouri

Andes Range & Furnace Corporation  
Geneva, New York

Apex Electrical Manufacturing Co.  
Cleveland, Ohio

Automatic Washer Company  
Newton, Iowa

Caloric Stove Corporation  
Topton, Pennsylvania

Canton Stamping & Enameling Co.  
Canton, Ohio

Chambers Corporation  
Shelbyville, Indiana

Conlon-Moore Corporation  
Chicago, Illinois

Crosley Division, Avco Mfg. Corp.  
Richmond, Indiana

Crunden Martin Manufacturing Co.  
St. Louis, Missouri

Federal Enameling & Stamping Co.  
Pittsburgh, Pennsylvania

The Fletcher Enamel Company  
Dunbar, West Virginia

General Electric Company  
Erie, Pennsylvania

Globe American Corporation  
Kokomo, Indiana

Hardwick Stove Company  
Cleveland, Tennessee

Hotpoint, Inc.  
Chicago, Illinois

Kaiser Metal Products, Inc.  
Bristol, Pennsylvania

Landers, Frary & Clark  
New Britain, Connecticut

A. J. Lindemann & Hoverson Co.  
Milwaukee, Wisconsin

Lisk-Savory Corporation  
Buffalo, New York

Malleable Iron Range Company  
Beaver Dam, Wisconsin

The Maytag Company  
Newton, Iowa

Moffats, Limited  
Weston, Ontario, Canada

The Moore Enameling & Mfg. Co.  
West Lafayette, Ohio

Murray Manufacturing Company  
Murray, Kentucky

Nash-Kelvinator Corporation  
Grand Rapids, Michigan

National Enameling & Stamping Co.  
Milwaukee, Wisconsin

Norge Division, Borg-Warner Corp.  
Effingham, Illinois

Norge Division, Borg-Warner Corp.  
Muskegon Heights, Michigan

Philco Corp., Refrigerator Division  
Philadelphia, Pennsylvania

Republic Stamping & Enameling Co.  
Canton, Ohio

Geo. D. Roper Corporation  
Rockford, Illinois

A. O. Smith Corporation  
Kankakee, Illinois

Speed Queen Corp., Ironer Division  
Algonquin, Illinois

The Tappan Stove Company  
Mansfield, Ohio

Thor Corporation  
Chicago, Illinois

Westinghouse Electric Corporation  
East Springfield, Mass.

Westinghouse Electric Corporation  
Mansfield, Ohio

### Certified Safe Transit Laboratories

Atlas Plywood Corporation  
Laboratory of Research & Design  
Lawrence, Massachusetts

## PRE-TESTED SAFE TRANSIT SHIPMENT

This PACKAGED PRODUCT meets the pre-testing standards established by the National Safe Transit Committee and will withstand ORDINARY transportation and handling hazards.

NATIONAL  
SAFE TRANSIT  
COMMITTEE



1010 VERMONT AVE., N.W.  
WASHINGTON 5  
D. C.

## MAKE SAFE HANDLING YOUR JOB !

Chicago Mill and Lumber Company  
33 South Clark Street  
Chicago, Illinois

Container Laboratories, Inc.  
112 West Kinzie Street  
Chicago, Illinois

Cozier Container Corporation  
446 East 131st Street  
Cleveland, Ohio

General Box Company  
514 North Dearborn Street  
Chicago, Illinois

The Hinde & Dauch Paper Company  
Sandusky, Ohio

Inland Container Corporation  
700 West Morris Street  
Indianapolis, Indiana

International Paper Company  
Georgetown, South Carolina

Ohio Boxboard Company  
Rittman, Ohio

Package Research Laboratory  
Rockaway, New Jersey

Packaging Service Corporation  
135 Greenwood Avenue  
Wyncote, Pennsylvania

Don L. Quinn Company  
224 West Kinzie Street  
Chicago, Illinois

U. S. Testing Company, Inc.  
1415 Park Avenue  
Hoboken, New Jersey



# Insulating recirculating heating systems *odd cut*

containing information of interest to manufacturers interested  
in insulating odd-shaped equipment or products

**T**HE problem of insulating odd-shaped heater units and recirculating blowers is quite a different matter from insulating ovens, ducts, and other units with flat sides. Rotating shafts, burner flange assemblies, and odd-angle duct connections make the geometry of these units quite complex and hence difficult to insulate.

If such parts are permitted to go uninsulated, the exposed areas of heater units and recirculating fans are sufficient to represent considerable heat losses and wasted fuel.

How this problem was solved by one manufacturer of major home appliances may help others facing similar problems. In this instance, white finishes are baked on the appliances by means of a 100-foot traveling oven maintained at 300° F.

Three large gas-fired heater units, coupled with three large 13,000 cfm fans driven by 10 hp motors, perform the functions of heating and recirculation at three points along the oven length. Since the oven is elevated some 10 feet above the plant floor and is fed with hot gases from the top, these heater-blower units are installed upon a special platform alongside the oven, 17½ feet above floor level.

## Four inches of insulation

Basic insulating material was four-inch thick mineral wool blanket, sandwiched between one-inch chicken-wire mesh on one side and expanded metal lath on the other, and supplied in 2 ft. x 8 ft. pieces. This material was selected for its high insulating efficiency, its non-settling quality under the constant vibration of fan and heater operation, and its ability to be cut easily and shaped to almost any contour. Some 1,132 square feet

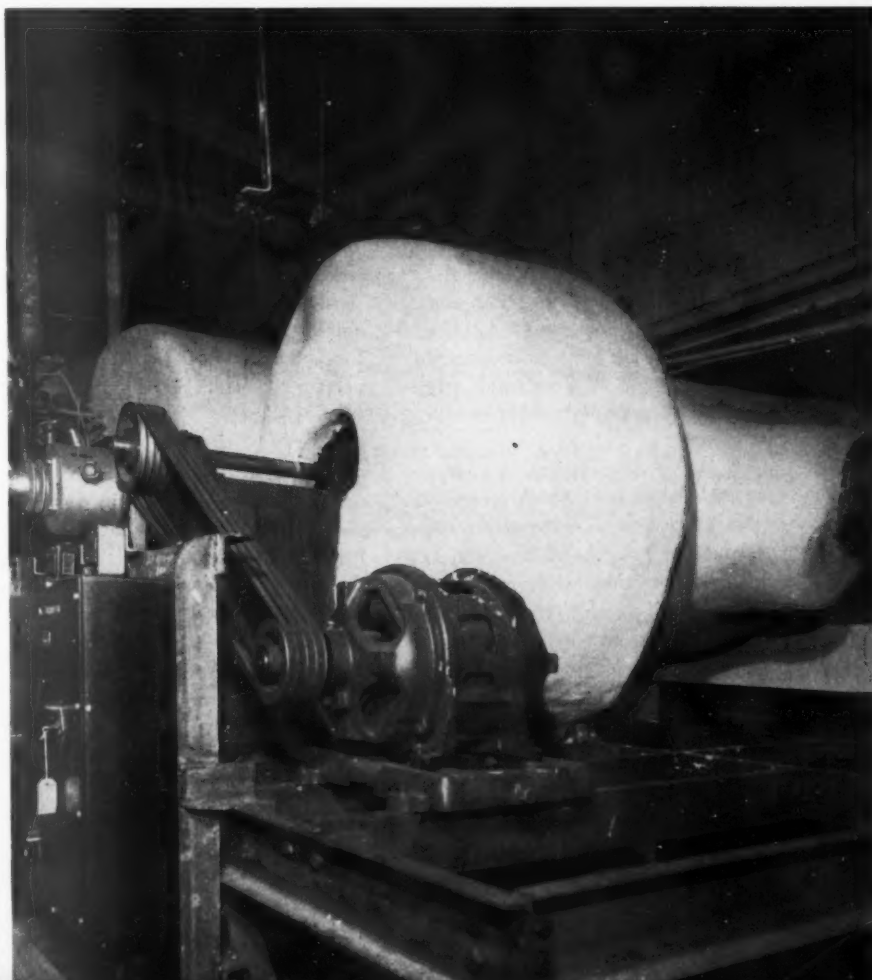
of surface were insulated and the job was completed in less than 32 hours, including application of finishing cement.

First, holes were drilled in the sheet-metal exteriors of fans, heaters and ducts. These holes were fitted with self-tapping screws which were used to affix long double tails of galvanized wire to the sides of the various pieces of equipment. Mineral wool blankets were then laid temporarily over the surfaces and drawn down so that marks could be made to indicate the geometry of the cutting of the chicken wire and metal lath for purposes of shaping the blankets in two directions. After marking, the blankets were spread out on the floor and the chicken wire

snipped first. The blanket was then turned over and the metal lath cut away. Finally the blanket itself was cut. The cutting was always done so that an overlap of both chicken wire and metal lath connected cut-blanket segments. None of the metal lath scraps were thrown away for they were later used in lacing exposed patches and areas of mineral wool so that the finished job had a complete envelope of metal lath for good adhesion of the finishing cement.

As the sections were installed after cutting, the galvanized tie wires were pushed through the blankets and the ends twisted together to hold them in place.

Loose scraps of mineral wool were used to fill in pie-shaped voids in the



*Photo shows thoroughness of insulation despite convolutions of surface.*

job, and scrap metal lath laced with galvanized wire was used to hold the patches in place. All corner joints of metal lath were laced as well as edge lapped.

The end result was a continuous four-inch layer of mineral wool securely retained within an intricate metal lath cage and held to the heater, blower, and ducts by wire ties. Thus, perfect resistance to movement of the insulation under the persistent vibrations of fan and heater operation was achieved. The close knit fibrous structure of the mineral wool was insurance against any possibility of settling of the insulation.

## 20 TIPS ON MANNING YOUR EXPOSITION BOOTH

If you employ booths at conventions and expositions for displaying your products, here are tips from a man who knows the business.

1. The vital work in an exposition begins when the show doors open—and booth personnel is the key to the effectiveness of that work.
2. It is bad to have too few booth representatives, but it is almost an equal sin to have too many.
3. Always impress on booth representatives the fact that an exposition represents in effect the salesman's dream—a situation in which the buyer voluntarily comes to them, open-minded, ready to be sold.
4. Be sure that your booth representatives are men with full technical knowledge of your product line—not just men who can quote prices and delivery dates or refer to a catalog.
5. If you show machinery or equipment, be sure your booth representatives know how to demonstrate every product in your booth that's set up for demonstration. If he can't, make sure that he doesn't try to do it but calls on someone who can.
6. Never staff a booth with apprentice salesmen or new trainees. However, it's a good idea to have some trainees there, because the exposition provides an excellent training ground.
7. Prepare a detailed schedule of personnel for each day of the show, for each period of each day, and see

Over the metal lath cage containing the blanket insulation was troweled a  $\frac{1}{2}$  to  $\frac{3}{4}$  inch layer of mineral wool insulating cement. After drying, this was topped with two heavy troweled coats of finishing cement to result in the smooth, hard finish apparent in the photograph.

While the areas of the heaters, recirculating fans, and connecting ducts represent only about  $\frac{1}{3}$  of the total heat-radiating surface, the application of insulation reduced the overall heat loss by  $\frac{1}{2}$  since these areas are those of highest temperatures and greatest gas-scrubbing action.

to it that every booth representative is completely familiar with the schedule and knows that he must adhere to it.

8. Prepare a detailed manual, to be sent in advance to all personnel, telling the basic facts about the show and its audience, the products the company will show, the literature available, the sales procedures to be followed, schedule of hotel accommodations, and all other information pertinent to his most effective representation of your company in the show.

9. Have a "dress rehearsal" of all your booth representatives before the show opens, with a talk by the man in charge, followed by a question-and-answer period. Demonstrate the forms that are available and how they are to be used. Specify location of surplus literature, outline responsibility for various functions. Cover every detail. Provide general information about the show, such as rest room location, whereabouts of the restaurant, copies of the exposition directory, convention program, etc.

10. Always use home office personnel in all but local or regional shows. Don't use salesmen from the local sales office, except with the specific understanding that they are to handle visitors only from their own territory.

11. If the advertising or sales promotion manager of your company is in charge of the booth, be sure he

has complete authority over the salesmen, or arrange to have someone there who does have the authority. The matter of relationship between staff and line representatives can create great difficulties.

12. Always have machine operators dressed in shop coats—and see to it that the shop coats are always clean. Don't have a machine operator in business clothes. If you employ a porter for show hours, put him in some simple uniform.

13. Don't permit wives or feminine non-booth personnel from your office to sit in your booth.

14. Booth representatives should never sit down in the booth, except when talking with a prospect. Adjust your schedule to allow sufficient rest periods for them so that they won't get weary on their feet.

15. If a man shows up in the morning with liquor on his breath or with bad breath from other causes, or is exhausted from too little sleep and too much play, send him back to his hotel or office. He can only do you harm, if he remains in the booth.

16. Some companies advocate having one staff to man the booth, a separate staff to do the entertaining in after-show hours.

17. Social grace is a desirable quality in booth representatives, but that's no excuse for their spending time exchanging wisecracks with neighbors or wandering off to a competitor's booth for friendly visits or otherwise.

18. Insist that booth representatives make out a report on each person they talk with, completely filling in the form set up for that purpose. Watch out particularly for men who pocket reports or fail to fill them in.

19. If you don't have a special porter, be sure that one of your booth representatives has definite responsibility for housekeeping of the booth during show hours.

20. Never permit salesmen to gather in groups—even of two men—to exchange jokes or to talk shop. Even during periods of light attendance, they should stand on the alert, ready to talk to any passer-by.

From an address by Saul Poliak, of Clapp and Poliak, Inc., before a meeting of Chicago Industrial Advertisers Association.

Use

## **McDANEL PORCELAIN PRODUCTS**

for  
**HIGH LEVEL PRODUCTION**  
and  
**LOW LEVEL COSTS**

Yes, when you want efficiency in operation and high productivity you can't do better than McDanel Porcelain Products. Yet these products will also hold your costs down to a minimum by giving longer service, better wear.

Carefully controlled, evenly fired and individually inspected, McDanel Porcelain Products are the best bet for greater production at lower cost throughout 1950.

McDANEL REFRACTORY PORCELAIN COMPANY BEAVER FALLS PENNSYLVANIA  
McDANEL REFRACTORY PORCELAIN COMPANY BEAVER FALLS PENNSYLVANIA

**McDANEL**  
*Industrial*  
**PORCELAINS**

**\* HAND ROLLED GRINDING BALLS**

Made from specially developed vitreous porcelain body and hand rolled for faster, uniform grinding. Mill tested and individually inspected before shipment to you.

**\* MILL LINING BRICK**

Low in glass content, McDanel Mill Lining Brick gives maximum resistance to wear and long, satisfactory service. Complete size range to fit every size mill.

**\* MILL HEAD ASSEMBLIES**

Be sure to specify McDanel Mill Head Assemblies on your new mills. No metal can contaminate your mill charge with these patented covers. They are tops for uniformity of batch and long service.

**\* METAL COVERED GRINDING JARS AND MILLS**

Protected with heavy gage steel jacket McDanel Metal Covered Grinding Jars and Mills are easy to handle, easy to clean, discharge rapidly and stand up under long usage.

**Chicago Vitreous Enamel Product Co.**  
**CICERO, ILL.**

Exclusive representative for the Enamel Industry

**McDANEL**  
**REFRACTORY PORCELAIN CO.**  
BEAVER FALLS, PA.

## ADVERTISERS' INDEX

	PAGE
ABBE, INC., PAUL O.....	79
ACME STEEL COMPANY.....	61
ARMCO STEEL CORPORATION.....	1
AMERICAN PORCELAIN ENAMEL CO.....	9
BIGELOW-GARVEY LUMBER CO.....	67
CENTURY VITREOUS ENAMEL COMPANY.....	6
CERAMIC COLOR & CHEMICAL MFG. CO....2nd COVER	
CHICAGO MILL AND LUMBER COMPANY.....	42
COWLES CHEMICAL COMPANY.....	31
FAHRALLOY COMPANY, THE.....	73
FERRO ENAMEL CORPORATION.....4th COVER	
FRANTZ COMPANY, INC., S. G.....	60
GENERAL BOX COMPANY.....	49
HARSHAW CHEMICAL COMPANY, THE.....	2
HOMMEL COMPANY, THE O.....	52
INGRAM-RICHARDSON MFG. CO. OF INDIANA, INC.	16
HUYCK CONSTRUCTION COMPANY.....	36
INLAND STEEL COMPANY.....	18
INTERNATIONAL NICKEL COMPANY, INC., THE....	24
JENSEN SPECIALTIES, INCORPORATED.....	65
LINK-BELT COMPANY .....	35
MACCO PRODUCTS COMPANY.....	8
McDANIEL REFRACTORY PORCELAIN COMPANY....	77
METAL & THERMIT CORPORATION.....	4
NEW MONARCH MACHINE & STAMPING CO.....	5
NORTHWEST CHEMICAL COMPANY.....	59
OREFRACTION, INC. ....	68
OWENS-CORNING FIBERGLAS CORPORATION.....	63
PALNUT COMPANY, THE .....	73
PEMCO CORPORATION.....	12 & 13
PENNSYLVANIA SALT MANUFACTURING CO....70 & 71	
PUNDERSON COMPANY, V. B.....	73
RATHBORNE, HAIR AND RIDGWAY BOX CO.....	62
ROBERTSHAW-FULTON CONTROLS COMPANY.....	66
SUPERIOR SHEET STEEL DIVISION.....	11
TINNERMAN PRODUCTS, INC.....3rd COVER	
TITANIUM ALLOY MANUFACTURING DIVISION....	32
TITANIUM PIGMENT CORPORATION.....	10
UNITED STATES SAVINGS BONDS.....	74
UNITED STATES STEEL CORPORATION.....	7
UNITED STATES TESTING COMPANY, INC.....	64
VITREOUS STEEL PRODUCTS CO.....	17
WEYERHAEUSER SALES COMPANY.....	69

**"I saw your ad in finish"**

## Avoiding enamel difficulties through proper furnace operation

→ from Page 27

### Recommended action

The first thing to do is obtain data and then analyze it. If off specification results are obtained, there are definite causes.

Breaks in the refractory will cause gases to bleed in a muffle furnace firing zone. Acid gases such as carbon dioxide and sulphur trioxide will enter the firing zone of the furnace. In addition, water vapor from the fuel, plus that vapor present due to the humidity of the air, results in high water vapor in the furnace atmosphere.

The next problem is sulphur present as sulphur trioxide. It has definitely been proven that sulphur from fuels causes scumming to a marked degree. Therefore, there are definite specifications set for sulphur in oil, and these specifications are less than one-half of one per cent sulphur. In the case of natural gas, the sulphur content is usually low. If it is burned correctly, no trouble will be experienced. Propane is in the same category if burned properly.

Concerning fluorine, proper venting will eliminate this contaminant. Notice the color of shoe plates in plants with continuous furnaces to obtain an idea of what this gas does to alloy.

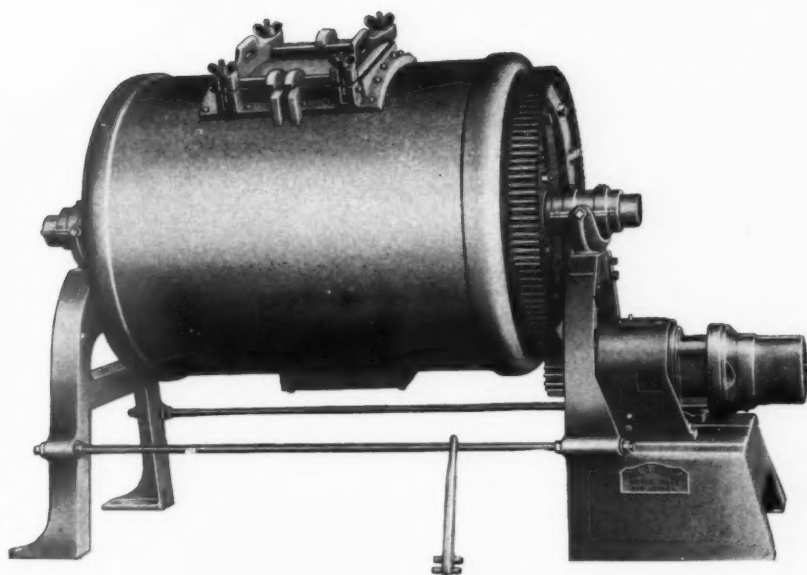
If sulphur dioxide from fuel enters a drier, ware can be contaminated by sulphur. The enamel bisque has a pH of 10, which is in the highly alkaline range. Usually alkaline salts are added for setting up agents. The bisque enamel is conveyed through the drier with millions of particles of frit plus a highly alkaline solution. Sulphur trioxide in that drier, from fuel due to improper combustion and ventilation, is absorbed by the alkaline liquor. This produces a monomolecular film of sodium sulphate on the surface of the enamel. When that bisque enters the furnace a flux on that enamel ware is present which will fuse and result in scumming. Another point to observe on the same subject is the pickle room.



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## NEWS → from Page 68

paying off in practical terms of cost reduction, weight saving, improved engineering design and better products were emphasized by leading management and technical executives of principal steel foundries in the East at a meeting in Buffalo, N. Y., March 29.

Principal speakers included Arthur Suckow, metallurgist, The Symington-Gould Corp.; Charles Locke, supervisor of foundry research, Armour Research Foundation, Illinois Institute of Technology; and J. E. Mullen, vice president, National Erie Corp., and a vice president, director and

executive committee member of the Society.

The Society, whose membership incorporates regional steel casting executive groups in eight geographical divisions of the country, represents a majority of the steel foundries in North America, and claims more than 90 per cent of productive capacity.

### GAMA TREASURER DIES

John Van Norden, treasurer, Gas Appliance Manufacturers Association, died March 17, in New York City. He was also secretary and sales promotion manager of American Meter Company.

### CURTAIN WALL CONSTRUCTION FOR CHICAGO BUILDING

A contract has been awarded American Bridge Company, U. S. Steel subsidiary, by the 860 Lake Shore Drive Trust to provide steel facings instead of the usual brick or masonry on Chicago's newest and most modern

apartment building, to be erected at 860 Lake Shore Drive.

The all steel and glass apartment building was designed by Ludwig Mies Van der Rohe, internationally famous architect, in association with

Pace Associates. Holsman, Holsman, Klekamp and Taylor are consultant architects. The dramatic and strikingly modern design calls for the use of steel facings, alone, unornamented by other trim. This is believed to be the first use of steel facings in a skyscraper of this size.

### TENNESSEE VALLEY ACS MEETINGS

The next meeting of the Tennessee Valley Section of the American Ceramic Society is scheduled for Paris, Tennessee, June 2 and 3. Plant visits to various clay mines and a stove plant are being arranged. The last meeting of the Section, held at Atlanta, Ga., featured a tour of the plant of The Warren Company, manufacturers of commercial refrigerators.

### ANNUAL ELECTRODEPOSITION CONFERENCE IN BOSTON

The 37th Annual Convention of the American Electroplaters Society and the 4th International Conference on Electrodeposition are scheduled for the Statler Hotel, Boston, June 12 to 15.

The technical program includes the following:

Two sessions on smoothing and levelling processes in electroplating; one session on the most recent results of the Society's Research Program and their value to the industry; one session on mechanical finishing methods; and one session devoted to general topics, including new applications of electroplating (and electroforming) to the printing industry.

### SPECIAL SEMI-CENTENNIAL CONVOCATION AT ALFRED U.

A special convocation to celebrate the semi-centennial of the New York State College of Ceramics at Alfred University will be held Sunday, June 11. The University will award honorary degrees to several ceramic educators and industrial men and the degree of professional engineer to Alfred alumni.

A special brochure tracing the history of the College and including a list of all alumni and their jobs is being published in connection with the event.

